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IONOSPHERIC DATA

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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

U. S. DEPARTMENT OF COMMERCE
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CENTRAL RADIO PROPAGATION LABORATORY
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IONOSPHERIC DATA

CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of D are counted as equal to or greater than the upper limit of the recorder.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic. This practice represents a change from that listed in issues previous to CRPL-F78.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

a. Differences in scaling records when spread echoes are present.

b. Omission of values when foF2 is less than or equal to foF1, leading to erroneously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number										
	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945
December		11	15	33	53	86	108	114	126	85	38
November		10	16	38	52	87	112	115	124	83	36
October		10	17	43	52	90	114	116	119	81	23
September		8	18	46	54	91	115	117	121	79	22
August		8	18	49	57	96	111	123	122	77	20
July		8	20	51	60	101	108	125	116	73	
June		9	21	52	63	103	108	129	112	67	
May		10	22	52	68	102	108	130	109	67	
April		10	24	52	74	101	109	133	107	62	
March		11	27	52	78	103	111	133	105	51	
February		12	29	51	82	103	113	133	90	46	
January	12	14	30	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 78 and figures 1 to 156 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Republica Argentina, Ministerio de Marina:
Buenos Aires, Argentina
Decepcion I.

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geology and Geophysics:
Watheroo, Western Australia

University of Graz:
Graz, Austria

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
Leopoldville, Belgian Congo

Defence Research Board, Canada:
Baker Lake, Canada
Churchill, Canada
Ottawa, Canada
Resolute Bay, Canada
Winnipeg, Canada

Radio Wave Research Laboratories, National Taiwan University, Taipeh, Formosa, China:
Formosa, China

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:
Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
Christchurch, New Zealand
Rarotonga, Cook Is.

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:
Oslo, Norway
Tromso, Norway

Manila Observatory:
Baguio, P. I.

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa
Nairobi, Kenya (East African Meteorological Department)

Research Laboratory of Electronics, Chalmers University of Technology, Gothenburg, Sweden:
Kiruna, Sweden

Research Institute of National Defence, Stockholm, Sweden:
Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:
Lulea, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
Schwarzenburg, Switzerland

United States Army Signal Corps:
Okinawa I.
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Guam I.
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
Narsarssuak, Greenland
Panama Canal Zone
Puerto Rico, W. I.
San Francisco, California (Stanford University)
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 79 through 90 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

Table 91 presents ionosphere character figures for Washington, D. C., during January 1955, as determined by the criteria given in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, geomagnetic K-figures, which are usually covariant with them.

RADIO PROPAGATION QUALITY FIGURES

Tables 93a and 93b give for December 1954 the radio propagation quality figures for the North Atlantic area, the relevant CRPL advance and short-term forecasts, a summary geomagnetic activity index and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, Qa, separately for each 6-hour interval of the Greenwich day, viz., 00-06, 06-12, 12-18, 18-24 hours UT (Universal Time or GCT).
(b) whole-day radio quality indices (beginning October 1952). Each index is a weighted average of the four quarter-day Qa-figures, before rounding off, with half weight given to quality grades 5 and 6. This procedure tends to give whole-day indices suitable for comparison with whole-day advance forecasts which designate whenever possible the days when significant disturbance or unusually quiet conditions will occur.
(c) short-term forecasts, issued by CRPL every six hours (nominally one hour before 00^h, 06^h, 12^h, 18^h UT) and applicable to the period 1 to 13 (especially 1 to 7) hours ahead. Note that new scoring rules have been adopted beginning with October 1952 data.
(d) advance forecasts, issued semiweekly (CRPL-J reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole-day quality indices.
(e) half-day averages of the geomagnetic K indices measured by the Cheltenham Magnetic Observatory of the U. S. Coast and Geodetic Survey.
(f) illustration of the comparison of short-term forecasts with Qa-figures and also with estimates of radio quality based on CRPL observations only.
(g) illustration of the outcome of advance forecasts (1 to 3 or 4 days ahead) and, for comparison, the outcome of a type of "blind" forecast. For the latter the frequency for each quality grade, as determined from the distribution of quality grades in the four most recent months of the current season, is partitioned among the grades observed in the current month in proportion to the frequencies observed in the current month.

These radio propagation quality figures, Qa, are prepared from radio traffic data reported to CRPL by American Telephone and Telegraph Company, Mackay Radio and Telegraph Company, RCA Communications, Inc., Marconi Company, British Admiralty Signal and Radar Establishment, and the following agencies of the U. S. Government:--Coast Guard, Navy, Army Signal Corps, and U. S. Information Agency. The method of calculation, summarized below, is similar to that described in a 1946 report, IRPL-R31, now out of print. Only reports of radio transmission on North Atlantic paths closely approximating New York-London are included in the estimation of quality.

The original reports are submitted on various scales and for various time intervals. The observations for each 6-hour interval are averaged on the quality scale of the original reports. These 6-hour indices are then adjusted to the 1 to 9 quality-figure scale by a conversion table prepared by comparing the distribution of these indices for at least four months, usually a year, with a master distribution determined from analysis of the reports originally made on the 1 to 9 quality-figure scale. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale.

The 6-hourly quality figures are (subjectively) weighted means of the reports received for that period. These 6-hourly quality figures replace, beginning January 1953, the half-daily quality figures which formerly appeared in this table. (These forecasts and quality indices are prepared by the North Atlantic Radio Warning Service, the CRPL forecasting center at Ft. Belvoir, Virginia.)

Table 92 gives for December 1954, the radio propagation quality figures for the North Pacific area, the relevant CRPL advance and short-term forecasts, and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, Qp, separately for each of three 9-hour intervals of the Greenwich day, viz., 03-12, 09-18 and 18-03 UT (Universal Time or GCT).
(b) whole-day radio quality indices for each Greenwich day. These are derived from the same basic data as the 9-hour indices, separately reduced.
(c) short-term forecasts, issued daily at 02, 09 and 18 hours UT.
(d) advance forecasts, issued semiweekly (CRPL-Jp reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole day quality indices.

These radio quality indices, Qp, refer to radio propagation on optimum frequencies over moderately long transmission paths in the North Pacific area. Typical paths are Anchorage (Alaska) to Seattle, or Anchorage to Tokyo. The indices are derived from reports submitted regularly by communications agencies of the U. S. Army and Air Force, and by Aeronautical Radio, Inc. The method of derivation of Qp differs from that of Qa. For data prior to June 1954, the reported quality ratings were reduced to a Q-scale with assumed mean and standard deviation for each of the periods of the day; the Qp published was the average converted rating for each date. Beginning with the data for June 1954 a ranking method has been used with the Q-scale bound statistically to magnetic character figures, as follows:

The original reports from the various contributors are used only to rank the days of the month in order of degree of disturbance. The numerical value of Qp assigned to each day is taken from a table which gives the Qp that corresponds in a statistical sense to the magnetic activity observed during the month, it being assumed that the one-month sample is large enough that the distribution of quiet and disturbance will be the same for magnetic and radio quality indices. This table comes from equating the expected distributions of magnetic activity indices and Qp (for the former, the years 1952-53 of K-Cheltenham were used; for the latter the distribution was arbitrary but strongly influenced by experience with Qa and the previous Qp). In order to avoid the statistic "average rank," the raw scores for each reporter-period are first converted to the 1-9 scale by ranking and the use of the same table. Mean quality indices for each day-period are then computed and these means ranked and converted by the table to give Qp.

The expected distributions adopted for Qp differ slightly for the different periods of the day for which quality figures are derived. For the 03-12, 18-03 and 00-24 periods 23% of the quality figures are 4 or less and for the 09-18 period 25% are. In the periods 18-03 and 00-24, indices of seven or greater are expected 25% of the time; in the 03-12 period 22% and in the 09-18 period 16%. (These forecasts and quality indices are prepared by the North Pacific Radio Warning Service, the CRPL forecasting center at Anchorage, Alaska.)

These quality figures are, in effect, a consensus of reported radio propagation conditions. The reasons for low quality are not necessarily known and may not be limited to ionospheric storminess. For instance, low quality may result from improper frequency usage for the path and time of day. Although, wherever it is reported, frequency usage is included in the rating of reports, it must often be an assumption that the reports refer to optimum working frequencies. It is more difficult to eliminate from the indices conditions of low quality because of multipath, interference, etc. These considerations should be taken into account in interpreting research correlations between the Q-figures and solar, auroral, geomagnetic or similar indices.

OBSERVATIONS OF THE SOLAR CORONA

Tables 94 through 96 give the observations of the solar corona during January 1955, obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 97 through 99 list the coronal observations obtained at Sacramento Peak, New Mexico, during January 1955, derived by Harvard College Observatory as a part of its performance of a research contract with the Upper Air Research Observatory, Geophysical Research Directorate, Air Force Cambridge Research Center. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Beginning with January 1, 1955 the Climax, Colorado, coronal measurements are reported in absolute units rather than on the arbitrary relative scale that has been used in the past. Absolute intensities are given in millionths of the intensity in one angstrom of the spectrum of the center of the solar disk at the wavelength of the coronal line. A conversion table from arbitrary relative to absolute units will appear in a later issue of this publication. The Sacramento Peak measurements will continue to be on an arbitrary relative scale.

Table 94 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 95 gives similarly the intensities of the first red (6374A) coronal line; and table 96, the

intensities of the second red (6702A) coronal line; all observed at Climax in January 1955.

Table 97 gives the intensities of the green (5303A) coronal line; table 98, the intensities of the first red (6374A) coronal line; and table 99, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in January 1955.

The following symbols are used in tables 94 through 99: a, observation of low weight for whole limb (if in date column) or for portion of limb indicated; -, corona not visible; and X, no observation for whole limb (if in date column) or for portion of limb indicated.

RELATIVE SUNSPOT NUMBERS

Table 100 lists the daily provisional Zürich relative sunspot number, R_Z, for January 1955, as communicated by the Swiss Federal Observatory. Table 101 contains the daily American relative sunspot number, R_A', for December 1954, as compiled by the Solar Division, American Association of Variable Star Observers.

OBSERVATIONS OF SOLAR FLARES

Table 102 gives the preliminary record of solar flares reported to the CRPL. These reports are communicated on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete records are published later in the Quarterly Bulletin of Solar Activity, I.A.U., in various observatory publications, and elsewhere. The present listing serves to identify and roughly describe the phenomena observed. Details should be sought from the reporting observatory.

Reporting directly to the CRPL are the following observatories: Mt. Wilson, McMath-Hulbert, U. S. Naval, Wendelstein, Kanzel and High Altitude at Sacramento Peak, New Mexico. The remainder report to Meudon (Paris) and the data are taken from the Paris-URSIgram broadcast, monitored fairly regularly by the CRPL. The data on solar flares reported from Sacramento Peak, New Mexico, communicated by the High Altitude Observatory at Boulder, Colorado, are provided by Harvard University as the result of work undertaken on an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories.

The table lists for each flare the reporting observatory, date, times of beginning and ending of observation, duration (when known), total area (corrected for foreshortening), and heliographic coordinates. For the maximum phase of the flare is given the time, intensity, area relative to the total area, and the importance. The column "SID observed" is to indicate when a sudden ionosphere disturbance, noted elsewhere in these reports, occurred at the time of a flare. Times are in Universal Time (GCT).

INDICES OF GEOMAGNETIC ACTIVITY

Table 103 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary international character-figures, C; (2) geomagnetic planetary three-hour-range indices, Kp; (3) daily "equivalent amplitude" Ap; (4) magnetically selected quiet and disturbed days.

The C-figure is the arithemetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm). The magnetically quiet and disturbed days are selected by the international scheme outlined on pages 219-227 in the December 1943 issue of Terrestrial Magnetism and Atmospheric Electricity. The details of the currently used method follow. For each day of a month, its geomagnetic activity is assigned by weighting equally the following three criteria: (1) the sum of the eight Kp's; (2) the greatest Kp; and (3) the sum of the squares of the eight Kp's.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 (very quiet) to 9 (extremely disturbed), expressed in thirds of a unit, e.g., 5- is 4 2/3, 5o is 5 0/3, and 5+ is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948," published in Washington, D. C., 1949, by the Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics.

Ap indicates magnetic activity on a linear scale rather than the quasi-logarithmic scale of the K-indices. The column headed Ap gives the daily average for the eight values ap per day, where ap is defined as one-half the average gamma range of the most disturbed of the three force components, in the three-hour interval at standard stations. Ap is computed from the 8 indices Kp per day, see IATME Bulletin No. 12h (for 1953), p. VIII f. Values of Ap (like Kp and Cp) have been published for the Polar Year 1932/33 and currently since January 1937.

The Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table. The Meteorological Office, De Bilt, Holland, collects the data and compiles C and selected days. The Chairman of the Committee computes the planetary index. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe)

SUDDEN IONOSPHERE DISTURBANCES

Tables 104 and 105 list respectively the sudden ionosphere disturbances observed at Washington, D. C., and in England for January 1955.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) January 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	2.4						3.1
01	270	2.5						3.1
02	270	2.5						3.1
03	260	2.8						3.15
04	250	2.9						3.25
05	250	2.9					2.2	3.3
06	240	2.7					2.2	3.3
07	240	2.6						3.6
08	230	4.5	---	---	(130)	1.8		3.6
09	230	5.3	220	---	120	2.3	3.0	3.5
10	250	5.8	210	3.7	110	2.6		3.5
11	250	6.2	210	(3.9)	110	2.8		3.4
12	250	6.2	200	3.9	110	2.8	3.0	3.4
13	250	6.3	210	3.8	110	2.8		3.4
14	250	6.1	220	3.7	110	2.7		3.5
15	250	5.8	220	---	110	2.4		3.5
16	230	5.5	220	---	120	2.0		3.5
17	220	5.0						3.4
18	220	4.3						3.4
19	230	3.3						3.3
20	250	2.6						3.2
21	270	2.3						3.1
22	(280)	2.2						3.1
23	(280)	2.4						

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Narsarssuak, Greenland (61.2°N, 45.4°W) December 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					4.4	---
01	---	---					4.4	---
02	---	(1.9)					4.4	(3.0)
03	---	(2.1)					4.0	(3.0)
04	<300	2.2					3.4	3.1
05	(280)	1.9					2.8	3.1
06	(280)	(1.8)					2.2	(3.2)
07	---	(1.7)					2.2	---
08	(270)	1.9						3.2
09	230	3.2						3.4
10	230	4.0	220	---				3.5
11	240	4.5	230	---				3.5
12	230	4.8	230	---				3.5
13	230	4.7	---	---				3.5
14	240	4.6	---	---				3.4
15	230	4.2						3.3
16	240	3.5					1.8	3.2
17	260	2.8					2.8	3.2
18	---	(2.2)					3.5	(3.1)
19	---	(2.1)					3.4	(3.1)
20	---	---					4.1	---
21	---	---					4.3	---
22	---	---					4.4	---
23	---	---					4.9	---

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 3

San Francisco, California (37.4°N, 122.2°W) December 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	(3.0)					(3.3)	(3.15)
01	250	(2.9)					(2.9)	(3.2)
02	250	(2.8)					(2.8)	(3.2)
03	250	(3.0)					(2.8)	(3.15)
04	250	(2.9)					(2.8)	(3.1)
05	250	(2.9)					(3.3)	(3.15)
06	260	(2.9)					(3.6)	(3.2)
07	240	(3.3)					(3.2)	(3.3)
08	230	5.0	220	(2.4)	(130)	(1.9)	(3.3)	3.5
09	240	5.6	220	(3.2)	120	(2.4)	(3.7)	3.5
10	250	5.6	230	(3.8)	120	(2.7)	3.8	3.45
11	260	6.3	230	(3.9)	120	(2.9)	4.0	3.3
12	260	6.6	230	(4.0)	120	(2.9)	3.7	3.3
13	260	6.4	240	(3.9)	120	(2.8)	3.8	3.3
14	260	6.2	240	(3.7)	120	(2.7)	3.8	3.4
15	250	5.6	240	(3.1)	120	(2.4)	3.7	3.5
16	240	5.0	---	---	(130)	(1.9)	3.6	3.5
17	220	(4.3)	---	---			(3.7)	(3.4)
18	240	(2.8)					(3.6)	(3.3)
19	240	(2.6)					(3.0)	(3.4)
20	240	(2.4)					(3.4)	(3.4)
21	260	(2.5)					(2.9)	(3.2)
22	280	(2.7)					(3.2)	(3.0)
23	(280)	(3.0)					(3.0)	(3.05)

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 4

White Sands, New Mexico (32.3°N, 106.5°W) December 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	3.2					(1.9)	3.3
01	230	3.2					2.4	3.4
02	220	3.3					(2.2)	3.5
03	220	3.3					(2.2)	3.5
04	220	3.2						3.4
05	230	3.0					(1.9)	3.3
06	230	3.0						3.3
07	200	3.8			---	---	(2.3)	3.7
08	210	5.2	200	---	110	2.0	2.6	3.8
09	220	5.6	210	3.7	110	2.5	3.8	3.7
10	230	5.9	200	3.8	100	2.7	4.1	3.7
11	230	6.0	200	4.0	110	(2.9)	4.4	3.6
12	230	6.1	200	4.0	100	2.9	4.5	3.6
13	240	6.1	200	3.9	110	2.8	4.7	3.6
14	230	6.4	210	(3.8)	110	2.7	4.4	3.6
15	220	6.1	200	---	100	2.4	4.3	3.7
16	200	5.2	---	---	110	2.0	3.2	3.75
17	200	4.4					3.2	3.7
18	210	3.2					3.7	3.6
19	220	2.7					3.5	3.6
20	230	2.7					3.8	3.6
21	240	2.8					3.2	3.4
22	240	2.9					3.2	3.3
23	240	3.2					2.8	3.3

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 5

Okinawa I. (26.3°N, 127.8°E) December 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.6						3.0
01	290	(2.8)						(3.15)
02	260	2.8						3.2
03	250	2.8						3.4
04	240	2.6						3.3
05	280	2.1						3.1
06	280	2.2						3.1
07	240	4.3	240	---	---	---		3.6
08	240	5.7	230	---	120	2.3	3.0	3.5
09	270	6.8	230	4.0	110	2.7	3.5	3.4
10	250	7.4	220	4.2	110	2.8	3.7	3.5
11	270	7.1	220	4.2	110	3.0	4.0	3.4
12	280	8.0	220	4.3	110	3.0	3.9	3.2
13	260	8.8	240	4.2	110	3.0	4.1	3.4
14	250	8.0	240	4.0	110	2.9	4.0	3.4
15	240	6.9	240	---	110	2.6	3.8	3.5
16	230	6.5	230	---	110	2.1	3.3	3.6
17	220	5.4					3.1	3.6
18	210	4.2					2.6	3.55
19	240	3.7					2.4	3.25
20	230	3.9						3.2
21	250	3.5						3.2
22	250	3 0						3.4
23	260	2.6						3.2

Time: 127.5°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 6

Maui, Hawaii (20.8°N, 156.5°W) December 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(2.6)					2.4	(2.85)
01	310	(2.9)					1.4	(3.1)
02	260	(2.9)					1.7	3.3
03	250	(2.4)					1.7	3.3
04	240	(2.0)					1.7	(3.5)
05	300	(1.7)						(3.2)
06	320	(1.8)					1.9	(3.0)
07	280	3.5			---	---	1.7	3.1
08	280	5.4	260	---	130	2.1		3.2
09	300	7.2	250	4.0	120	2.7	3.8	3.1
10	280	7.8	240	4.2	120	3.0	3.8	3.3
11	320	7.7	220	4.4	120	3.1	5.0	3.0
12	330	7.8	220	4.4	120	3.2	5.0	2.8
13	320	8.6	220	4.3	120	3.2	4.9	3.0
14	300	9.2	240	4.2	120	3.0	4.8	3.0
15	280	9.3	250	4.0	120	2.8	4.7	3.3
16	270	7.0	260	---	120	2.5	4.8	3.4
17	240	5.6	---	---	---	---	4.0	3.5
18	230	4.2					3.9	3.5
19	250	3.0					3.9	3.3
20	300	2.6					3.6	3.0
21	280	2.8					4.4	3.15
22	280	2.7					2.9	3.1
23	280	2.5					2.7	3.0

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 7

Puerto Rico, W. I. (18.5°N, 67.2°W) — December 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.0					1.9	3.2
01	240	(4.2)						(3.4)
02	220	4.2						3.4
03	220	4.2					1.9	3.5
04	230	3.2					2.4	3.5
05	240	3.0						3.2
06	240	3.0						3.2
07	220	4.2						3.5
08	240	5.2	230	---	110	2.1		3.55
09	260	6.0	230	---	110	2.6	3.3	3.5
10	250	6.5	220	4.1	110	2.9	3.1	3.5
11	270	6.4	210	4.3	110	3.0	3.8	3.5
12	270	6.0	220	4.3	110	3.1	4.0	3.5
13	270	6.3	200	4.2	110	3.1	3.5	3.4
14	270	6.5	220	4.2	110	3.0	3.3	3.5
15	260	6.0	220	4.0	110	2.9	3.4	3.5
16	250	5.9	220	---	110	2.6	3.2	3.5
17	220	5.6	220	---	110	2.0	3.3	3.7
18	210	4.6					2.9	3.6
19	220	4.0					3.0	3.5
20	240	3.4					3.0	3.3
21	260	3.4					3.1	3.2
22	260	3.8					2.9	3.1
23	260	4.0					2.1	3.2

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 8

Guam I. (13.6°N, 144.9°E) — December 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	3.7					1.8	3.35
01	240	3.3					1.3	3.3
02	240	3.2						3.4
03	230	2.9						3.5
04	240	2.2						3.4
05	250	1.6						3.4
06	300	(1.5)						3.1
07	230	4.5	---	---	120	1.6	2.5	3.5
08	260	6.1	220	---	110	2.4	3.2	3.3
09	280	7.6	210	4.0	110	2.7	3.9	3.2
10	310	8.0	200	4.3	110	3.0	4.5	3.0
11	320	8.0	190	4.3	110	3.1	4.5	2.7
12	330	7.5	190	4.4	110	3.2	4.6	2.6
13	330	7.7	200	4.3	110	3.2	4.1	2.8
14	320	8.0	210	4.3	110	3.1	4.4	2.9
15	290	8.3	210	4.1	110	2.9	4.2	3.1
16	270	8.4	220	---	110	2.6	4.3	3.3
17	240	8.6	230	---	120	1.9	3.8	3.4
18	220	7.8					3.3	3.5
19	210	6.8					3.0	3.5
20	210	5.4					3.2	3.4
21	220	4.8					3.0	3.3
22	230	4.5					2.8	3.3
23	240	4.0					2.3	3.3

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 9

Panama Canal Zone (9.4°N, 79.9°W) — December 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	(3.4)					2.5	(3.4)
01	240	(3.2)					2.6	(3.3)
02	240	(2.6)					3.2	(3.3)
03	250	2.4					3.4	3.25
04	270	2.1					2.7	3.0
05	280	2.3					>3.8	3.0
06	290	2.6					4.2	3.0
07	250	4.8	250	---	150	2.1	3.8	3.4
08	280	6.2	240	(4.0)	120	2.4	3.8	3.3
09	280	7.4	240	4.2	110	2.9	>4.3	3.3
10	280	7.5	230	4.3	110	3.1	4.3	3.3
11	290	7.8	220	4.4	110	3.2	4.8	3.2
12	300	7.5	220	4.5	110	3.3	5.0	3.2
13	300	6.9	220	4.4	110	3.3	5.3	3.2
14	300	7.0	200	4.3	110	3.2	5.4	3.2
15	280	7.0	240	4.3	110	3.0	5.0	3.3
16	270	6.5	240	4.0	110	2.7	>4.3	3.4
17	250	6.1	240	---	120	2.2	4.3	3.5
18	220	4.7					3.7	3.6
19	240	3.2					3.1	3.2
20	250	3.2					3.2	3.3
21	260	3.0					2.9	3.1
22	280	3.2					2.3	3.0
23	260	(3.4)					2.1	(3.2)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 10

Resolute Bay, Canada (74.7°N, 94.9°W) — November 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.2					4.8	3.2
01	260	2.3					4.8	3.3
02	250	2.3					5.0	3.2
03	270	2.0					4.9	3.2
04	270	2.4					4.4	3.2
05	260	2.3					4.0	3.2
06	260	2.4					4.4	3.2
07	260	2.8					5.0	3.1
08	250	3.1					4.8	3.1
09	240	3.4			---	1.1	4.8	3.2
10	240	3.9			110	1.5	4.2	3.2
11	240	3.7			110	1.3	4.2	3.2
12	240	3.7			110	1.4	4.0	3.3
13	240	3.8			100	1.3	4.0	3.2
14	240	3.6			110	1.2	4.3	3.2
15	240	3.6			---	---	4.0	3.2
16	250	3.4					3.7	3.2
17	240	3.4						3.2
18	240	3.2					4.0	3.2
19	250	2.8					4.4	3.2
20	250	2.7					4.0	3.2
21	250	2.6					4.2	3.2
22	250	2.5					3.9	3.2
23	250	2.4					4.0	3.2

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 11

Reykjavik, Iceland (64.1°N, 21.8°W) — November 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					3.9	---
01	---	---					4.0	---
02	---	---					5.0	---
03	---	---					4.2	---
04	(320)	(2.2)					3.8	(3.1)
05	(300)	(2.2)					(3.8)	(3.0)
06	(300)	(2.3)						(3.2)
07	---	(2.3)						---
08	250	2.4			---	---		3.2
09	240	3.4			---	---		3.4
10	230	4.0			---	---		3.5
11	240	4.3			---	---		3.4
12	240	4.6	---	---	---	---		3.4
13	240	4.6			---	---		3.5
14	240	4.5			---	---		3.5
15	240	4.1						3.4
16	250	(4.0)						3.25
17	240	(3.4)					3.3	(3.2)
18	(260)	(3.4)					3.8	(3.3)
19	(270)	(2.6)					3.7	---
20	(280)	(2.2)					3.8	---
21	---	---					3.8	---
22							3.6	
							4.8	

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 12

Anchorage, Alaska (61.2°N, 149.9°W) — November 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	E					2.2	(3.0)
01	---	(1.3)					2.4	(3.0)
02	---	E					2.3	(3.0)
03	(370)	(1.4)					2.8	(3.0)
04	(340)	(1.7)					2.8	(2.9)
05	(350)	(1.9)					2.6	(2.9)
06	<320	(1.6)					2.0	(3.0)
07	<300	(1.8)					1.6	(3.0)
08	250	3.0	240	---	110	---	1.6	3.3
09	250	3.7	230	---	120	(1.6)	1.9	3.4
10	250	4.4	230	---	120	(1.8)		3.4
11	250	4.6	230	---	120	(2.0)		3.4
12	250	5.0	230	---	130	(2.0)		3.4
13	240	5.2	240	---	120	(1.9)		3.4
14	230	5.2	240	---	130	(1.7)		3.5
15	220	4.7	---	---	---	---	1.6	3.45
16	220	4.0					1.4	3.4
17	230	3.1						3.3
18	250	2.2						3.3
19	<270	1.8						3.25
20	---	E						(3.1)
21	---	E						(3.0)
22	---	E					2.2	(3.2)
23	---	<1.2						---

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 13

Lindau/Harz, Germany (51.6°N, 10.1°E) November 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.9					2.2	3.1
01	265	3.0					2.1	3.0
02	260	3.0					2.2	3.1
03	250	2.9					2.3	3.1
04	250	2.6					2.2	3.2
05	240	2.3					2.4	3.3
06	250	2.2					2.5	3.4
07	230	2.7					2.4	3.4
08	215	4.1	205		---	E	2.5	3.6
09	215	5.0	210		120	2.0	3.0	3.7
10	220	5.4	205		110	2.2	3.4	3.7
11	230	5.6	215		115	2.4	3.5	3.6
12	230	5.8	210		115	2.4	3.5	3.6
13	225	5.7	210		115	2.4	3.5	3.6
14	230	5.6	220		110	2.2	3.5	3.5
15	225	5.5	---		120	2.0	3.1	3.6
16	215	5.0					3.1	3.6
17	210	4.2					3.0	3.5
18	220	3.4					2.6	3.5
19	230	3.0					2.4	3.3
20	250	2.7					2.3	3.3
21	250	2.6					2.3	3.3
22	275	2.6					2.2	3.1
23	275	2.8					2.1	3.1

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 14

Winnipeg, Canada (49.9°N, 97.4°W) November 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(320)	2.2						(3.0)
01	330	2.2						(2.95)
02	(330)	2.0					3.7	---
03	(330)	2.0					3.4	---
04	(320)	2.2					4.0	(3.0)
05	---	2.0					3.7	---
06	---	(2.0)					4.0	---
07	300	2.2					3.0	(3.0)
08	250	3.7			---	(1.7)		3.4
09	250	4.5	220	---	120	2.0		3.4
10	260	5.0	210	3.5	120	2.4		3.4
11	270	5.7	210	3.7	120	2.6		3.4
12	260	6.0	220	3.8	120	2.6		3.4
13	260	6.1	220	3.6	120	2.5		3.4
14	250	5.8	230	3.5	120	2.4		3.4
15	240	5.9	230	3.0	130	2.3		3.5
16	230	5.6	230	---	130	2.0		3.5
17	220	4.8						3.4
18	230	3.9						3.4
19	250	3.0						3.3
20	270	2.3						3.3
21	290	1.9						3.3
22	(310)	1.9						(3.05)
23	(380)	1.9						---

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 16 seconds.

Table 15

Okinawa I. (26.3°N, 127.8°E) November 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.8						3.05
01	260	2.9						3.1
02	250	3.1						3.25
03	240	3.0						3.35
04	230	2.8						3.5
05	<250	(2.1)						3.3
06	260	2.7						3.2
07	240	5.4	---	---	130	2.0		3.5
08	240	6.6	240	---	110	2.5	2.9	3.55
09	260	6.8	240	---	110	2.7	3.4	3.4
10	270	8.0	230	(4.2)	110	2.9	3.7	3.3
11	270	8.8	230	(4.3)	110	3.0	3.8	3.3
12	280	8.8	230	(4.4)	110	3.0	4.1	3.2
13	280	10.3	220	(4.4)	110	3.0	4.4	3.2
14	250	10.4	240	(4.2)	110	2.8	3.8	3.4
15	240	9.2	230	---	120	2.6	3.8	3.5
16	230	7.0	240	---	120	2.2	3.0	3.6
17	210	6.0						3.7
18	200	4.5						3.5
19	230	4.2						3.1
20	240	4.1						3.2
21	240	3.4						3.2
22	<260	3.0						3.1
23	280	2.9						3.1

Time: 127.5°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 16

Formosa, China (25.0°N, 121.5°E) November 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.5						2.9
01	260	3.3					2.0	3.15
02	240	3.4					2.0	3.2
03	240	3.4					2.4	3.25
04	220	2.7					2.0	3.25
05	<250	2.3					2.0	3.05
06	270	3.0					2.0	3.0
07	220	5.8			---	2.0	2.4	3.6
08	240	6.4	220	3.8	100	2.4	3.0	3.5
09	250	7.4	220	4.2	110	2.8	3.3	3.45
10	260	8.8	210	4.2	110	3.1	3.8	3.4
11	260	9.5	220	4.4	110	3.1	4.1	3.3
12	260	10.7	210	4.4	110	3.2	4.2	3.1
13	250	11.8	220	4.4	100	3.1	4.2	3.4
14	240	12.5	220	4.2	100	3.0	4.3	3.4
15	230	11.0	220	3.9	100	(3.0)	3.6	3.5
16	220	9.1	210	3.3	100	2.3	3.2	3.45
17	200	7.7			---	---	3.0	3.8
18	200	6.1					2.9	3.7
19	210	4.8					2.5	3.4
20	240	4.7					2.3	3.2
21	240	4.4					2.1	3.2
22	240	3.7						3.3
23	240	3.6						3.2

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 17

Huancayo, Peru (12.0°S, 75.3°W) November 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	(6.0)						(3.1)
01	300	---						---
02	300	(4.1)						(3.3)
03	270	(2.5)						(3.5)
04	240	(3.0)						(3.4)
05	240	2.6						3.4
06	240	5.4			120	1.9	6.4	3.4
07	(270)	7.5	220	---	110	2.5	7.4	3.3
08	300	8.4	210	---	100	2.9	10.6	3.1
09	320	8.9	200	4.3	100	---	11.8	2.9
10	340	9.0	200	4.4	100	---	12.0	2.7
11	340	8.8	200	4.5	100	---	12.0	2.6
12	340	8.6	200	4.5	100	---	11.4	2.7
13	340	9.0	190	4.5	100	3.4	11.6	2.7
14	330	9.0	190	4.3	100	3.3	11.2	2.7
15	320	9.2	200	4.2	100	3.1	10.6	2.7
16	(290)	9.6	200	---	110	---	9.4	2.75
17	240	9.6	---	---	110	---	6.8	2.8
18	250	9.4			120	---		2.9
19	270	8.8						2.9
20	270	8.5						3.0
21	280	7.6						2.9
22	300	7.0						2.9
23	320	(5.8)						(2.7)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 18

Resolute Bay, Canada (74.7°N, 94.9°W) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	2.6					3.1	3.2
01	270	2.5					4.0	3.15
02	270	2.7					3.6	3.2
03	270	2.7					3.5	3.2
04	270	2.5					4.0	3.1
05	270	2.8					4.0	3.2
06	260	2.7			---	---	4.0	3.2
07	260	2.9			---	---	4.0	3.2
08	260	3.3			120	1.4	4.0	3.2
09	270	3.4	220	---	110	1.6	4.0	3.2
10	270	3.5	240	---	110	1.8		3.2
11	280	4.2	250	2.8	110	1.9		3.1
12	280	4.1	240	3.0	110	1.9		3.1
13	270	4.0	240	3.0	110	1.9		3.15
14	260	4.0	240	---	110	1.8		3.3
15	270	3.9	250	---	110	1.7		3.2
16	250	4.0	---	---	110	1.4		3.25
17	250	3.9			---	---	3.5	3.2
18	250	3.7					3.0	3.2
19	250	3.3					4.0	3.2
20	250	3.0					4.0	3.2
21	260	2.8					3.5	3.2
22	260	2.6					4.0	3.2
23	260	2.6					3.0	3.2

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 19

Kiruna, Sweden (67.8°N, 20.3°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(320)	(2.6)					2.3	(3.0)
01	(360)	(2.0)					3.2	(2.9)
02	(320)	(2.3)					2.0	(2.95)
03	325	2.1						3.0
04	330	2.1						3.0
05	340	2.0						2.95
06	290	2.7						3.1
07	250	3.3						3.2
08	250	3.7	---	---	---	---		3.3
09	260	3.9	225	3.0	110	2.0		3.3
10	260	4.2	220	3.2	110	2.0		3.3
11	260	4.2	230	3.2	110	2.1		3.3
12	260	4.8	230	3.2	110	2.2		3.45
13	240	4.7	220	3.0	110	2.0		3.3
14	240	4.2	230	2.7	110	2.0		3.4
15	250	4.0	---	---	---	---		3.4
16	250	3.8			---	---	2.0	3.3
17	250	3.4					2.0	3.2
18	250	3.3					2.4	3.2
19	270	3.0					3.2	3.2
20	280	2.8					3.5	3.2
21	300	2.8					3.8	3.0
22	(310)	(2.2)					3.7	(3.0)
23	(325)	(2.2)					3.3	(2.9)

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 20

Lulea, Sweden (65.6°N, 22.1°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	340	(2.2)					1.8	
01								
02	320	2.0					1.8	
03								
04	(330)	(2.0)						
05								
06	270	2.4						
07								
08	240	4.0	205	2.2	145	1.8		
09								
10	255	4.7	215	3.2	125	2.3		
11								
12	250	5.0	220	3.5	120	2.3		
13								
14	240	4.7	205	2.5	120	2.0		
15								
16	235	4.0	---	---	---	E		
17								
18	250	(2.6)						
19								
20	280	(2.4)						
21								
22	325	2.1					2.2	
23								

Time: 15.0°E.
Sweep: 1.5 Mc to 10.0 Mc in 6 minutes, automatic operation.

Table 21

Baker Lake, Canada (64.3°N, 96.0°W) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.1			---	---	6.0	3.05
01	280	2.2			---	---	6.0	3.05
02	290	2.0			---	---	5.8	3.0
03	300	2.1			---	0.9	5.1	3.0
04	280	2.1			180	1.3	5.0	3.05
05	300	2.3			130	1.8	5.0	3.0
06	290	2.4	---	---	130	1.9	5.0	2.9
07	300	2.8	---	---	120	2.0	5.3	3.1
08	270	3.5	240	2.8	110	2.2	5.0	3.2
09	300	3.7	240	3.0	120	2.4	5.0	3.1
10	360	4.0	250	3.2	120	2.5	4.5	3.1
11	300	4.2	250	3.4	120	2.6	5.0	3.1
12	340	4.3	250	3.6	120	2.6	3.6	3.0
13	320	4.8	250	3.4	120	2.6	3.9	3.1
14	300	4.9	250	3.3	120	2.4	5.0	3.1
15	280	4.5	260	3.2	110	2.3	4.5	3.0
16	280	4.2	260	3.1	120	2.1	5.0	3.1
17	270	3.9	---	---	130	2.0	5.0	3.1
18	270	3.3			130	2.0	6.0	3.05
19	280	3.1			130	1.8	6.0	3.0
20	260	3.0			120	1.7	8.0	3.1
21	270	2.4			---	---	8.0	3.1
22	260	2.4			---	---	6.3	3.15
23	260	2.3			---	---	7.5	3.1

Time: 90.0°W.
Sweep: 0.6 Mc to 10.0 Mc in 16 seconds.

Table 22

Reykjavik, Iceland (64.1°N, 21.8°W) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					4.2	---
01	---	---					4.3	---
02	---	---					3.5	---
03	---	---					4.4	---
04	---	---					4.0	---
05	---	---					3.7	---
06	---	---					2.9	---
07	(270)	(2.8)						(3.4)
08	260	3.4			---	---		3.4
09	270	3.9	240	---	---	---		3.3
10	280	4.2	240	(3.3)	---	---		3.3
11	300	4.6	230	3.5	---	---		3.3
12	290	4.8	240	3.5	---	---		3.4
13	280	4.9	230	3.3	---	---		3.4
14	280	4.6	240	3.4	---	---		3.3
15	260	4.4	240	---	---	---		3.4
16	250	4.3	---	---	---	---		3.4
17	250	4.0			---	---	1.8	3.3
18	250	4.2			---	---	3.5	3.4
19	(260)	(3.8)					4.0	(3.3)
20	(250)	(3.2)					3.9	---
21	---	---					4.2	---
22	---	---					4.2	---
23	---	---					4.5	---

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 23

Oslo, Norway (60.0°N, 11.1°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	2.0						(2.85)
01	295	1.8					2.2	2.9
02	300	1.7					1.8	2.8
03	285	1.8					(1.0)	2.85
04	285	1.7					(1.3)	2.9
05	295	1.6					1.9	2.9
06	265	2.1			---	---	3.2	3.0
07	250	3.0	---	---	125	1.6	3.0	3.2
08	235	3.8	230	---	120	1.9	2.4	3.35
09	245	4.2	225	---	120	2.1	2.8	3.35
10	250	4.8	215	3.5	115	2.3	3.0	3.3
11	260	5.2	215	(3.6)	115	2.4	2.9	3.35
12	250	5.4	215	(3.6)	110	2.5	2.8	3.4
13	250	5.5	215	(3.4)	115	2.4	2.7	3.4
14	240	5.2	220	---	115	2.3	2.8	3.4
15	230	4.9	225	---	120	2.1	2.8	3.45
16	230	4.7	235	---	125	1.8	1.4	3.35
17	240	4.4	---	---	---	1.6	3.0	3.3
18	240	4.2	---	---			3.1	3.15
19	240	3.8					3.0	3.15
20	245	3.4					1.9	3.15
21	245	2.8					2.2	3.1
22	(250)	2.2						3.0
23	(280)	2.0					2.6	2.9

Time: 15.0°E.
Sweep: 0.6 Mc to 14.0 Mc in 8 minutes, automatic operation.

Table 24

Upsala, Sweden (59.8°N, 17.6°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	(2.1)					2.2	(2.9)
01	330	(2.1)					2.2	(3.0)
02	340	(2.1)					2.3	(2.8)
03	310	(2.0)					2.6	2.9
04	300	(1.9)					2.8	(3.0)
05	310	(1.7)			---	---	3.0	(3.0)
06	270	2.4			---	E	2.3	3.15
07	240	3.3	225	2.4	---	1.5	2.4	3.3
08	245	4.0	225	3.0	130	1.8	2.3	3.3
09	250	4.6	220	3.3	120	2.1	2.4	3.4
10	260	5.0	215	3.5	115	2.2	3.0	3.3
11	260	5.2	210	3.6	110	2.3	2.6	3.4
12	255	5.3	205	3.6	105	2.4	2.6	3.5
13	250	5.5	205	3.5	110	2.2	2.5	3.4
14	245	5.4	220	3.2	110	2.1	2.4	3.45
15	235	5.0	225	2.8	115	1.9	2.3	3.5
16	230	4.7	240	2.7	---	1.6	2.4	3.4
17	240	4.2			---	E	2.4	3.3
18	240	3.9			---	---	1.8	3.15
19	250	3.3					2.1	3.1
20	250	2.8						3.1
21	270	2.4						3.1
22	300	(2.2)						3.0
23	320	(2.1)						2.9

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 25

Churchill, Canada (58.8°N, 94.2°W) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	(2.7)					7.5	---
01	(300)	(2.8)					6.2	
02	---	(2.3)					5.2	---
03	---	(2.6)					5.0	---
04	---	(3.0)					5.0	
05	---	(2.8)					4.8	
06	---	(3.0)					5.2	---
07	300	3.6	---	---	120	2.6	4.8	---
08	290	4.0	---	---	110	2.6	5.4	3.2
09	300	4.1	250	3.4	110	2.7	4.4	3.2
10	320	4.4	230	3.6	120	2.6	4.0	3.25
11	320	4.5	220	3.8	110	2.7	3.7	3.15
12	320	5.0	220	3.7	110	2.7	3.4	3.2
13	320	4.8	250	3.7	110	2.7		3.2
14	310	5.0	240	3.6	110	2.6		3.1
15	290	4.7	250	3.5	110	2.5		3.25
16	280	4.5	240	---	120	2.0	3.2	3.2
17	260	4.2	---	---	120	2.2	3.7	3.2
18	280	3.9			120	1.6	4.0	(3.2)
19	300	3.6			---	---	4.3	(3.35)
20	290	3.2			---	---	6.5	(3.3)
21	(300)	2.4					7.5	---
22	---	(2.5)					8.3	---
23	---	---					9.0	

Time: 90.0°W.
Sweep: 0.6 Mc to 10.0 Mc in 16 seconds.

Table 26

De Bilt, Holland (52.1°N, 5.2°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<280	2.8						2.8
01	270	3.0						2.8
02	260	2.9						2.9
03	250	2.8						2.95
04	240	2.4						3.0
05	240	2.0						3.1
06	230	3.2	---	---	---	E		3.3
07	220	4.4	220	2.7	120	1.9		3.4
08	220	4.9	210	3.4	110	2.4		3.5
09	240	5.2	210	3.8	100	2.6	2.8	3.5
10	240	5.9	200	4.0	100	2.7	3.2	3.5
11	240	6.5	200	3.9	100	2.8	3.0	3.4
12	230	6.0	200	3.9	100	2.8	2.5	3.5
13	240	6.0	200	3.8	100	2.8		3.4
14	230	5.6	210	3.8	100	2.6		3.4
15	220	5.7	220	3.4	110	2.3		3.4
16	220	5.5	---	---	120	1.9		3.5
17	220	5.0			---	E		3.4
18	230	4.9						3.2
19	230	4.5						3.3
20	220	3.8						3.3
21	240	3.0						3.0
22	250	2.8						2.9
23	260	2.8						2.9

Time: 0.0°.
Sweep: 1.4 Mc to 11.2 Mc in 6 minutes, automatic operation.

Table 27

Lindau/Harz, Germany (51.6°N, 10.1°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.8					2.2	3.0
01	275	2.9					2.2	3.0
02	270	3.0					2.3	3.1
03	260	3.0					2.2	3.1
04	255	2.6					2.4	3.1
05	250	2.2					2.3	3.3
06	250	2.3			---	E	2.2	3.2
07	225	3.6	230	---	---	E	2.6	3.5
08	230	4.6	220	---	120	1.9	2.2	3.6
09	240	5.2	220	3.6	110	2.3	2.4	3.5
10	240	5.7	205	3.8	105	2.6	3.9	3.5
11	250	6.1	205	3.9	105	2.6	3.8	3.5
12	250	6.2	205	3.9	105	2.6	3.5	3.5
13	250	5.9	200	3.8	105	2.6	3.6	3.5
14	250	5.8	210	3.8	105	2.6	3.5	3.5
15	240	5.7	225	---	110	2.4	3.1	3.5
16	235	5.4	225	---	120	2.0	3.1	3.5
17	225	5.3	---	---	---	E	3.1	3.5
18	230	4.8			---	E	2.7	3.4
19	240	4.7					2.5	3.3
20	230	4.2					2.3	3.35
21	240	3.3					2.2	3.2
22	260	3.2					2.2	3.2
23	275	2.8					2.2	3.1

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 28

Winnipeg, Canada (49.9°N, 97.4°W) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	2.3					2.4	(3.0)
01	340	2.3					3.0	---
02	(340)	2.3					3.1	---
03	(350)	2.0					3.6	---
04	(380)	(2.2)					3.3	---
05	(340)	(2.0)					3.6	---
06	(330)	2.3					3.4	---
07	270	3.2	---	---	---	1.6		3.25
08	260	3.9	230	3.6	120	2.0		3.25
09	300	4.1	220	3.6	110	2.4		3.3
10	310	4.5	220	3.8	110	2.6		3.3
11	320	4.8	210	3.9	110	2.7		3.3
12	300	5.2	210	3.9	110	2.8		3.2
13	310	5.1	210	3.9	110	2.9		3.25
14	300	5.2	220	3.8	110	2.8		3.3
15	290	5.2	230	3.7	110	2.5		3.3
16	270	5.0	230	3.4	120	2.3		3.4
17	240	4.8	240	---	120	1.9		3.3
18	240	4.3						3.3
19	250	3.9						3.3
20	260	2.9						3.2
21	280	2.4						3.1
22	290	2.1						3.0
23	(330)	2.0						---

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 16 seconds.

Table 29

Graz, Austria (47.1°N, 15.5°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(285)	3.1						
01	(300)	3.1						
02	(295)	3.2						
03	(290)	3.0						
04	(275)	3.1						
05	(250)	2.7						
06	260	3.0						
07	230	4.6						
08	240	5.1	220	3.6				
09	240	5.8	210	3.8			2.8	
10	250	6.1	210	4.0			4.0	
11	250	6.6	210	4.0			4.0	
12	250	6.3	210	4.1			3.2	
13	250	6.3	210	4.0			3.4	
14	250	6.0	210	4.0				
15	240	6.2	(200)	---				
16	230	6.0						
17	230	4.9						
18	240	4.8						
19	250	4.4						
20	250	4.0						
21	250	3.5						
22	270	3.3						
23	(290)	3.1						

Time: 15.0°E.
Sweep: 2.5 Mc to 12.0 Mc in 2 minutes.

Table 30

Schwarzenburg, Switzerland (46.8°N, 7.3°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.8						3.3
01	300	3.0						3.2
02	300	3.0						3.3
03	280	2.9						3.3
04	250	2.9						3.4
05	220	2.6						3.6
06	250	2.2						3.5
07	200	3.7			---	---		3.9
08	200	4.9	---	---	100	2.0		3.9
09	200	5.2	---	---	100	2.4		3.8
10	240	5.9	200	4.0	100	2.6		3.7
11	210	6.8	---	---	100	2.7	5.0	3.8
12	200	6.4	200	4.0	100	2.8		3.8
13	200	6.4	200	4.2	100	2.8		3.7
14	200	6.0	200	4.2	100	2.7		3.8
15	200	6.0	---	---	100	2.6		3.75
16	200	5.8			100	2.4		3.85
17	200	5.9			100	2.0		3.8
18	200	5.2						3.8
19	210	4.6						3.6
20	200	4.4						3.6
21	210	3.6						3.6
22	240	3.2						3.4
23	260	3.0						3.4

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 31

Ottawa, Canada (45.4°N, 75.9°W) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(310)	2.2						(3.0)
01	(330)	2.0					2.3	(3.05)
02	(320)	(2.1)					2.2	---
03	(380)	2.0					2.2	---
04	---	(2.0)					2.9	---
05	---	(2.0)					4.0	---
06	270	2.3			---	---		3.0
07	250	3.7	230	3.0	120	2.0		3.3
08	260	4.5	230	3.4	120	2.3		3.4
09	280	5.0	220	3.8	110	2.6		3.3
10	280	5.3	200	3.9	110	2.8		3.4
11	280	5.5	200	4.0	110	2.9		3.4
12	290	5.8	200	4.0	110	3.0		3.25
13	280	5.8	210	4.0	110	2.9		3.25
14	280	5.6	230	3.9	110	2.8		3.2
15	270	5.6	230	3.7	110	2.6		3.3
16	250	5.3	240	3.2	120	2.2		3.35
17	240	5.1	230	---	130	1.7		3.3
18	230	4.7						3.2
19	250	4.0						3.15
20	250	3.2						3.1
21	280	2.6						3.0
22	300	2.3						3.1
23	310	2.1						(3.0)

Time: 75.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 32

Wakkanai, Japan (45.4°N, 141.7°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.6					2.5	
01	280	3.6					2.8	
02	270	3.6					3.0	
03	270	3.5					2.7	
04	260	3.4					2.5	
05	260	3.1					2.5	
06	240	4.0					2.7	
07	240	5.3					2.7	
08	260	6.0					3.6	
09	260	6.6					4.0	
10	260	7.2					3.9	
11	260	7.1					3.6	
12	250	7.4					3.5	
13	250	6.4					3.5	
14	260	6.1					3.5	
15	250	6.5						
16	230	6.1					2.9	
17	230	5.0					3.0	
18	240	4.1					2.6	
19	260	4.0					3.0	
20	270	3.8					3.0	
21	280	3.8					2.7	
22	290	3.9					2.6	
23	290	3.8					2.5	

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 33

Akita, Japan (39.7°N, 140.1°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.8					2.5	
01	260	3.6					2.3	
02	260	3.6					2.5	
03	250	3.6					2.5	
04	240	3.5					2.4	
05	240	3.0					2.4	
06	210	4.2					3.0	
07	230	5.6					2.6	
08	240	6.3						
09	240	7.3					4.0	
10	250	7.1					4.1	
11	250	7.5					4.0	
12	250	7.3					4.0	
13	250	6.9					3.5	
14	250	6.5					3.5	
15	240	6.6					3.5	
16	230	6.7					3.5	
17	210	6.0					3.5	
18	220	4.6					3.5	
19	240	4.0					3.5	
20	250	3.8					3.1	
21	260	3.8					3.0	
22	270	3.8					3.0	
23	280	3.8					2.5	

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 34

Tokyo, Japan (35.7°N, 139.5°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.5					2.6	3.0
01	280	3.5					2.5	3.0
02	260	3.5					2.4	3.0
03	250	3.5					2.5	3.0
04	230	3.4					2.5	3.2
05	250	2.9					2.4	3.1
06	230	4.5	---	---	150	1.6	2.5	3.4
07	230	6.0	230	3.2	120	2.2	3.0	3.5
08	240	7.1	230	3.9	110	2.6	3.6	3.5
09	250	7.3	220	4.1	110	2.8	3.8	3.5
10	250	7.4	220	4.3	110	3.0	4.2	3.4
11	250	7.6	200	4.4	110	3.0	4.1	3.4
12	260	7.5	210	4.2	110	3.0	3.9	3.3
13	260	7.4	220	4.2	110	3.0	3.5	3.3
14	250	7.0	240	4.1	110	2.9	3.5	3.3
15	250	7.0	240	3.8	110	2.6	3.5	3.4
16	240	6.9	240	3.3	120	2.2	3.7	3.5
17	220	6.5	---	---	120	1.6	3.5	3.5
18	220	4.4					3.2	3.4
19	250	3.6					3.5	3.1
20	260	3.6					3.0	3.0
21	260	3.5					2.7	3.0
22	280	3.5					2.8	2.9
23	280	3.5					2.6	3.0

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 35

Yamagawa, Japan (31.2°N, 130.6°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.5					2.3	
01	290	3.4					2.3	
02	270	3.3					2.3	
03	270	3.2					2.4	
04	250	3.2					2.3	
05	260	2.9					2.3	
06	260	3.1					2.3	
07	230	5.5					2.4	
08	240	6.4					3.2	
09	250	7.5					3.4	
10	260	7.8						
11	270	8.2						
12	280	8.6						
13	280	8.5						
14	270	8.4						
15	270	8.4					3.4	
16	250	7.6					3.7	
17	240	7.6					3.4	
18	230	6.2					3.2	
19	230	4.4					3.0	
20	280	3.5					2.8	
21	300	3.5					3.3	
22	280	3.5					2.4	
23	300	3.4					2.4	

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 36

Formosa, China (25.0°N, 121.5°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.8					2.2	3.0
01	260	3.9					2.2	3.0
02	260	3.5					1.9	3.15
03	240	3.4					1.9	3.4
04	230	3.3					2.2	3.35
05	240	3.2					2.0	3.25
06	240	4.0					2.1	3.15
07	230	6.3			120	2.2	2.8	3.7
08	240	6.8	220	4.0	120	2.6	3.6	3.5
09	270	7.6	220	4.3	120	2.9	3.5	3.3
10	280	9.2	220	4.5	110	3.2	3.8	3.2
11	280	10.3	220	4.6	110	3.3	3.3	3.4
12	280	11.7	230	4.7	---	---	3.4	3.2
13	280	>13.0	240	4.6	---	---	3.4	3.3
14	280	>13.4	240	4.4	110	3.2	3.3	3.3
15	240	12.7	240	4.1	110	(2.9)	3.3	3.5
16	240	10.8	240	3.9	110	2.6	3.4	3.5
17	220	9.7	---	---	---	---	3.6	3.7
18	220	8.4					3.6	3.65
19	220	5.4					3.0	3.6
20	240	4.8					2.7	3.0
21	280	4.9					2.4	3.2
22	260	4.2					2.2	3.1
23	280	3.7						(3.1)

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 37

Baguio, P. I. (16.4°N, 120.6°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	5.9					2.0	3.2
01	230	5.2					2.2	3.4
02	210	5.2					2.0	3.55
03	200	3.7					1.9	3.6
04	210	2.4					2.0	3.4
05	<260	2.2					2.2	3.1
06	230	4.1					2.3	3.5
07	220	6.5			110	2.2	4.1	3.5
08	(260)	7.5	220	---	110	2.7	4.4	3.4
09	290	8.7	210	---	100	3.0	5.0	3.0
10	310	9.8	200	---	100	3.1	5.8	2.7
11	310	9.9	200	---	100	3.2	5.4	2.6
12	320	9.6	190	---	100	3.2	4.7	2.4
13	310	10.0	200	---	100	3.2	4.1	2.7
14	300	10.5	200	---	100	3.0	4.2	3.0
15	270	11.1	210	---	110	2.8	4.7	3.1
16	250	11.0	220	---	110	2.4	4.5	3.3
17	230	10.7			---	---	3.5	3.3
18	230	10.4					3.2	3.3
19	220	9.4					2.8	3.2
20	220	9.0					3.3	3.2
21	230	7.8					3.5	3.1
22	260	7.2					3.8	3.1
23	240	6.7					2.8	3.2

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 38

Leopoldville, Belgian Congo (4.3°S, 15.3°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M2000)F2
00	255	4.0					1.7	2.2
01	275	4.0						2.25
02	260	3.6					1.9	2.4
03	240	3.3						2.6
04	230	2.9					1.6	2.7
05	230	5.0	---	---	---	1.6	2.4	2.9
06	245	6.3	230	---	115	2.4	1.8	2.8
07	275	6.5	220	4.1	110	2.9	3.0	2.7
08	315	8.8	215	4.3	110	3.1	2.8	2.3
09	340	8.0	215	4.5	110	3.3		2.1
10	345	9.0	205	4.5	110	3.5		2.1
11	370	9.5	200	4.5	110	3.5		2.1
12	380	10.0	210	4.5	105	3.4		2.1
13	360	10.5	200	4.4	110	3.3	3.5	2.1
14	330	11.5	240	4.2	110	3.0	3.3	2.2
15	300	12.2	240	---	110	2.6	3.3	2.3
16	270	>11.4	240	---	120	2.1	3.0	2.4
17	250	10.3					2.4	2.4
18	255	10.4					2.5	2.3
19	245	10.0						2.4
20	230	9.0						2.5
21	220	8.2						2.6
22	215	6.3						2.65
23	210	4.1						2.4

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 39

Huancayo, Peru (12.0°S, 75.3°W) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	6.6						3.1
01	250	(5.8)						(3.1)
02	240	4.9						3.3
03	240	3.9						3.4
04	260	3.0						3.4
05	260	2.3						3.3
06	240	5.1			120	1.7		3.4
07	(280)	7.4	230	---	120	2.5	5.8	3.3
08	300	8.5	220	4.3	110	---	10.4	3.1
09	320	8.9	200	4.3	110	---	11.5	2.8
10	340	8.6	200	4.5	100	---	12.2	2.5
11	360	7.6	200	4.5	100	---	12.5	2.6
12	360	7.6	200	4.5	100	---	12.4	2.6
13	350	7.8	200	4.5	100	---	12.0	2.6
14	340	8.0	200	4.3	110	---	11.6	2.6
15	320	8.2	200	4.2	110	---	11.0	2.65
16	(300)	8.6	200	---	110	---	9.6	2.7
17	250	8.8	240	---	120	2.2	6.3	2.7
18	260	8.9						2.9
19	280	8.6						2.8
20	280	8.0						2.9
21	260	7.8						3.1
22	240	7.8						3.05
23	250	7.2						3.1

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 40

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.2						3.0
01	240	3.4						3.1
02	240	3.2						3.2
03	<260	3.0						3.0
04	<260	3.0						3.0
05	<260	3.0						3.1
06	240	4.6	---	---	---	1.9		3.4
07	260	5.4	230	3.7	110	2.3		3.3
08	290	6.0	230	4.1	110	2.8		3.3
09	290	6.7	220	4.3	110	3.0		3.2
10	300	6.7	200	4.5	110	3.2		3.1
11	320	7.1	200	4.5	110	3.4		3.1
12	310	7.9	200	4.5	110	3.4		3.0
13	300	8.1	200	4.5	110	3.4		3.1
14	300	7.8	210	4.4	110	3.3	3.6	3.05
15	290	7.6	210	4.3	110	3.1	3.2	3.1
16	280	7.4	210	4.0	110	2.7	3.4	3.15
17	260	7.3	230	3.5	110	2.3	3.0	3.2
18	230	7.4			---	---		3.3
19	220	6.4						3.3
20	230	5.0						3.3
21	240	3.9						3.2
22	260	3.6						3.1
23	260	3.6						3.1

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 41

Watheroo, W. Australia (30.3°S, 115.9°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.6						3.0
01	260	3.6						3.1
02	250	3.4						3.2
03	250	3.1						3.15
04	250	2.8						3.0
05	260	3.0				---		3.0
06	250	3.9	---	---		1.8		3.3
07	260	4.5	240	3.6		2.2	2.4	3.3
08	320	4.8	230	4.0		2.7	3.1	3.2
09	360	5.0	220	4.3		3.0	3.6	3.05
10	350	5.6	210	4.3		3.1	3.5	3.05
11	350	6.4	210	4.5		3.2	3.8	3.0
12	330	6.5	210	4.5		3.2	3.6	3.0
13	310	6.5	200	4.4		3.2	3.6	3.2
14	300	6.4	220	4.3		3.2	3.4	3.25
15	300	6.0	220	4.2		3.0	3.2	3.2
16	300	5.8	230	4.0		2.8	2.9	3.2
17	270	5.5	240	3.5		2.3	2.3	3.3
18	250	5.0				1.7	1.6	3.2
19	240	5.2						3.2
20	250	4.2						3.2
21	250	3.9						3.1
22	270	3.8						3.0
23	270	3.8						3.1

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 2 minutes.

Table 42

Capetown, Union of S. Africa (34.2°S, 18.3°E) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.2						3.0
01	270	3.1						2.9
02	260	3.2						3.0
03	260	3.1						3.0
04	260	3.1						3.0
05	260	3.1						3.0
06	250	3.6						3.1
07	240	5.0	240	---	130	1.9		3.3
08	270	5.7	240	3.8	120	2.5		3.3
09	300	6.0	230	4.2	110	2.8		3.2
10	310	6.2	220	4.4	110	3.1		3.1
11	320	6.8	200	4.4	110	3.2		3.0
12	320	7.5	220	4.5	110	3.3		2.9
13	310	8.1	220	4.5	110	3.4		2.9
14	310	8.1	220	4.4	110	3.3		3.0
15	290	8.0	210	4.3	110	3.1		3.1
16	290	7.2	220	4.1	110	2.9		3.1
17	270	6.9	220	3.7	120	2.6		3.2
18	250	6.6	240	3.0	130	2.0		3.2
19	230	6.0			---	---		3.3
20	230	5.4						3.3
21	230	4.4						3.2
22	250	3.6						3.0
23	260	3.4						3.0

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 43

Buenos Aires, Argentina (34.5°S, 58.5°W) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.4						2.95
01	300	4.2						3.0
02	280	4.2					1.2	3.0
03	230	4.0						3.3
04	250	3.7						3.2
05	240	4.0			---	---		3.3
06	220	5.0	---	---	110	2.0	2.7	3.6
07	230	5.6	220	---	110	2.6	3.2	3.5
08	280	5.8	210	---	110	2.8	3.7	3.4
09	300	6.3	210	---	110	3.1	4.1	3.3
10	310	7.3	200	---	100	3.2	4.1	3.0
11	310	8.6	200	4.4	100	(3.2)	4.3	3.0
12	300	10.0	200	4.4	100	---	4.3	3.0
13	300	10.3	200	4.3	---	---	4.2	3.1
14	290	10.6	200	4.3	---	---	3.9	3.1
15	280	10.9	200	---	---	---	3.7	3.2
16	270	10.2	210	---	---	---	3.4	3.3
17	250	9.7	220	---			3.0	3.4
18	220	9.1					2.7	3.5
19	210	8.0						3.4
20	230	6.0						(3.3)
21	300	4.7						2.9
22	310	4.7						2.9
23	310	4.7						2.9

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 44

Decepcion I. (63.0°S, 60.7°W) October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.8	210	2.8				(3.1)
01	260	4.6	---	---				(3.1)
02	260	4.6	---	---				(3.1)
03	250	4.4	---	---				(3.2)
04	250	4.7	---	---				(3.2)
05	240	5.2	180	2.6				(3.3)
06	240	5.3	190	2.9			2.3	(3.3)
07	240	5.6	180	2.8			3.0	(3.4)
08	230	6.0	180	3.5			3.4	(3.4)
09	230	6.4	180	3.6			3.4	3.4
10	230	6.4	---	---			3.5	(3.4)
11	230	6.7	---	---			3.4	(3.5)
12	220	6.6	---	---			3.4	(3.4)
13	230	6.7	---	---			3.4	(3.4)
14	230	6.5	---	---			2.8	(3.4)
15	230	6.3	---	---			2.8	(3.4)
16	230	6.2	---	---			2.8	(3.4)
17	230	5.9	---	---			2.4	(3.4)
18	230	5.6	---	---			2.0	(3.4)
19	240	5.5	---	---				(3.3)
20	250	5.6	---	---				(3.3)
21	240	5.4	---	---				(3.2)
22	250	5.2	230	3.0				(3.2)
23	250	5.0	---	---				(3.2)

Time: 60.0°W.
Sweep: 1.5 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 45

Resolute Bay, Canada (74.7°N, 94.9°W) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.0						3.2
01	260	3.0						3.2
02	250	3.0					3.0	3.2
03	260	2.8					2.8	3.3
04	250	3.0					3.7	3.4
05	260	3.0	---	---	---	---	3.4	3.3
06	270	3.2	220	---	110	1.6	2.4	3.35
07	270	3.6	230	3.2	110	1.8	2.6	3.3
08	290	3.8	230	3.1	100	1.9		3.25
09	330	3.8	240	3.2	100	2.0		3.2
10	380	3.8	230	3.2	100	2.1		3.0
11	380	3.8	220	3.3	100	2.1		3.1
12	380	3.9	220	3.2	100	2.2		3.0
13	350	3.9	220	3.2	100	2.1		3.1
14	340	3.9	230	3.2	100	2.1		3.1
15	360	3.8	220	3.2	100	2.0		3.1
16	300	3.9	220	3.1	110	2.0		3.2
17	290	3.8	230	3.1	110	1.8		3.3
18	270	3.7	230	---	120	1.6		3.3
19	250	3.6	---	---	110	1.6		3.3
20	260	3.4			---	---	1.6	3.3
21	250	3.2			---	---		3.3
22	250	3.0						3.3
23	250	3.0						3.3

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 46

Kiruna, Sweden (67.8°N, 20.3°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(350)	(2.2)					3.4	(3.2)
01	(355)	(2.0)					3.1	(3.15)
02	(360)	(2.1)					2.2	(3.15)
03	(325)	(2.0)					1.6	(3.0)
04	(340)	(2.1)						(2.9)
05	305	2.1						3.3
06	(250)	(2.9)	---	---	---	---		(3.4)
07	260	3.2	---	---	---	---		3.4
08	310	3.6	230	3.1	110	2.1		3.4
09	350	3.9	230	3.2	110	2.2		3.3
10	350	4.0	220	3.3	110	2.3		3.3
11	310	4.2	215	3.3	110	2.3		3.4
12	315	4.0	215	3.4	110	2.4		3.3
13	310	4.2	220	3.3	110	2.2		3.3
14	280	4.0	220	3.2	110	2.1		3.4
15	270	4.0	220	3.0	120	2.0		3.45
16	275	3.8	220	3.0	125	1.9		3.4
17	250	3.7	---	---	---	---		3.35
18	260	3.1	---	---			2.0	3.4
19	300	2.9					2.6	3.0
20	300	2.8					3.1	3.0
21	(325)	(2.4)					3.8	(3.1)
22	---	---					4.0	---
23	---	---					4.0	---

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 47

Baker Lake, Canada (64.3°N, 96.0°W) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	2.5			---	---	7.0	3.1
01	290	2.4			---	---	6.8	3.1
02	300	2.4			---	---	8.0	2.9
03	280	2.5			---	---	6.0	3.1
04	290	2.4			---	---	5.2	3.0
05	290	2.4	---	---	110	1.6	5.0	3.05
06	280	2.8	240	2.2	110	1.7	4.8	3.1
07	280	3.1	220	2.6	110	2.0	5.0	3.1
08	380	3.5	220	3.1	110	2.2	5.6	2.9
09	G	<3.7	220	3.4	110	2.7	4.6	G
10	510	3.7	230	3.5	110	2.9	3.6	2.4
11	510	<4.0	230	3.6	110	3.0	4.0	2.35
12	440	4.1	240	3.7	110	2.9		2.8
13	420	4.2	240	3.7	110	2.9	4.0	2.8
14	390	1.3	240	3.7	110	2.9		2.85
15	380	4.3	240	3.6	110	2.8		2.85
16	360	4.2	240	3.5	120	2.7	4.5	2.95
17	300	4.1	240	3.3	120	2.4	5.8	3.1
18	280	3.8	220	3.0	120	1.9	6.0	3.1
19	270	3.6	---	---	120	1.8	7.0	3.0
20	270	3.3			120	1.5	8.0	3.0
21	260	3.2			---	---	>10.0	3.1
22	270	2.9			---	---	9.0	3.0
23	260	2.6			---	---	8.0	3.0

Time: 90.0°W.
Sweep: 0.6 Mc to 10.0 Mc in 16 seconds.

Table 48

Oslo, Norway (60.0°N, 11.1°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.0						2.95
01	300	(1.8)						(2.9)
02	300	1.5					1.4	(2.9)
03	300	(1.2)					2.6	(2.95)
04	300	(1.2)					1.3	---
05	260	1.9			---	---	1.6	3.1
06	250	2.6	235	---	125	1.6	2.7	3.3
07	(245)	3.4	220	---	110	1.8	1.8	(3.4)
08	G	3.6	220	3.4	100	2.0		G
09	390	4.0	215	3.5	100	2.3	2.5	3.1
10	350	4.3	205	3.7	100	2.5	2.8	3.15
11	350	4.4	200	3.8	100	2.6	2.9	3.2
12	330	4.3	200	3.8	100	2.6	2.9	3.25
13	340	4.4	210	3.9	100	2.6	3.0	3.25
14	315	4.4	205	3.8	100	2.6		3.3
15	(290)	4.3	215	---	100	2.4	2.7	3.35
16	(275)	4.3	220	---	100	2.2	2.2	(3.30)
17	240	4.2	235	---	110	1.9	2.1	(3.35)
18	250	4.2	235	---	120	1.6	2.0	3.2
19	250	4.4	---	---			3.0	3.15
20	245	4.0					3.4	3.2
21	245	3.3					1.7	3.2
22	250	2.7					2.5	3.1
23	(280)	2.4						3.0

Time: 15.0°E.
Sweep: 0.6 Mc to 14.0 Mc in 8 minutes, automatic operation.

Table 49

Churchill, Canada (58.8°N, 94.2°W) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					9.2	
01	(260)	(2.5)					9.0	
02	(280)	(2.2)			---	---	7.0	
03	(340)	2.6			---	---	7.0	---
04	(320)	(2.5)			---	---	5.0	
05	(280)	(2.6)			---	---	5.8	---
06	(320)	(3.0)	---	---	110	2.4	5.8	---
07	(350)	(3.3)	---	---	---	---	5.0	---
08	G	(3.6)	260	3.5	120	(2.9)	6.0	G
09	500	3.9	250	3.7	110	2.8	5.4	2.6
10	470	4.0	240	3.8	110	2.6	6.0	2.7
11	480	4.1	220	3.8	110	3.0	5.6	(2.7)
12	400	4.2	230	3.8	110	2.9	3.6	2.8
13	440	4.2	230	3.8	110	2.9		2.9
14	400	4.3	240	3.8	120	2.8	3.0	2.85
15	370	4.3	240	3.7	120	2.7	2.8	2.9
16	360	4.3	250	3.6	120	2.7	4.0	3.0
17	320	4.2	240	3.3	110	2.5	4.4	3.1
18	310	4.0	---	---	120	2.8	5.0	(3.2)
19	310	3.6			120	2.8	5.0	(3.05)
20	360	3.0			120	2.6	6.0	---
21	340	3.0			---	---	9.0	---
22	(290)	2.7			---	---	9.2	---
23	---	(2.6)					10.0	

Time: 90.0°W.
Sweep: 0.6 Mc to 10.0 Mc in 16 seconds.

Table 50

De Bilt, Holland (52.1°N, 5.2°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	2.6					2.0	2.9
01	---	2.6					2.0	2.9
02	---	2.5						2.9
03	---	2.4						2.9
04	---	2.3					2.5	3.0
05	---	2.4					2.8	3.1
06	230	3.3	205	---	---	E	2.2	3.4
07	240	3.6	210	3.4	110	2.1	2.6	3.3
08	340	4.1	200	3.7	100	2.5	3.1	3.2
09	330	4.5	200	3.9	100	2.8	3.2	3.2
10	335	4.7	200	4.0	100	2.9	3.2	3.3
11	310	4.8	200	4.1	100	3.0	3.5	3.5
12	310	4.8	200	4.1	100	3.0	3.6	3.3
13	300	5.0	200	4.0	100	3.0	3.2	3.3
14	300	4.8	200	4.0	100	2.8	3.1	3.3
15	280	4.8	205	3.8	100	2.6	3.0	3.4
16	280	4.8	220	3.6	105	2.4	2.7	3.3
17	230	4.9	230	---	120	1.7	2.5	3.3
18	230	4.8					2.8	3.3
19	240	5.0					2.3	3.2
20	<230	4.8					2.2	3.3
21	(210)	3.9						3.3
22	---	3.0						3.0
23	---	2.9						2.9

Time: 0.0°.
Sweep: 1.4 Mc to 11.2 Mc in 6 minutes, automatic operation.

Table 51

Winnipeg, Canada (49.9°N, 97.4°W) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	(2.4)					2.5	(3.0)
01	(350)	(2.3)					3.9	---
02	---	(2.1)					3.5	---
03	---	<2.3					3.5	---
04	---	(2.2)					3.2	(3.0)
05	---	(2.2)					3.4	---
06	280	2.5			---	---		3.1
07	G	<3.3	230	3.3	120	2.0		G
08	G	<3.6	220	3.5	120	2.3		G
09	G	3.8	210	3.7	120	2.6		G
10	420	4.1	200	3.8	110	2.8		2.8
11	470	4.2	200	3.9	110	2.9		2.8
12	410	4.4	200	3.9	110	3.0		2.9
13	400	4.5	200	3.9	110	3.0		3.0
14	380	4.5	220	3.9	110	2.9		3.0
15	350	4.6	220	3.8	110	2.8		3.1
16	340	4.4	220	3.7	110	2.5		3.1
17	300	4.3	230	3.5	120	2.3		3.2
18	270	4.2	240	---	120	1.8		3.2
19	250	4.0						3.2
20	250	3.4						3.1
21	280	2.7						3.1
22	300	2.3						3.1
23	310	2.2						(3.05)

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 16 seconds.

Table 52

Ottawa, Canada (45.4°N, 75.9°W) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	340	2.0						(3.0)
01	340	2.0					2.0	(2.9)
02	(320)	2.0					3.8	(3.0)
03	(320)	(2.0)					3.0	(3.2)
04	(300)	(2.0)					3.6	---
05	(300)	(2.1)					4.1	---
06	G	<3.0	240	3.0	130	1.8		G
07	G	<3.7	220	3.4	120	2.2		G
08	420	4.1	210	3.7	110	2.6		3.0
09	370	4.3	210	3.8	110	2.8		3.0
10	370	4.7	200	4.0	110	3.0		3.05
11	360	4.7	200	4.0	110	3.0		3.0
12	360	4.8	200	4.0	110	3.1		3.0
13	360	4.8	210	4.0	110	3.1		3.0
14	360	4.8	210	4.0	110	3.0		3.0
15	340	4.8	220	3.9	110	2.8		3.0
16	320	4.7	220	3.6	110	2.5		3.1
17	290	4.7	230	3.3	120	2.1		3.1
18	250	4.6	240	2.7	130	1.8		3.2
19	250	4.4						3.1
20	250	4.0						3.1
21	270	3.0						3.05
22	300	2.2						3.0
23	340	2.0						3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 53

Wakkanai, Japan (45.4°N, 141.7°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.4					2.4	
01	280	3.4					2.4	
02	280	3.3					2.5	
03	260	3.3					2.4	
04	260	3.2					2.5	
05	260	3.2					2.6	
06	260	4.1					3.5	
07	280	4.6					3.5	
08	310	5.0					4.0	
09	300	5.1					4.2	
10	310	5.1					4.0	
11	340	5.0					3.9	
12	340	5.2					3.8	
13	350	5.0						
14	330	5.1						
15	310	5.0						
16	290	5.0						
17	270	4.9					3.5	
18	250	5.2					3.4	
19	260	4.6					3.3	
20	270	4.6					3.0	
21	260	4.4					3.0	
22	270	3.8					3.2	
23	290	3.6					2.6	

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 54

Akita, Japan (39.7°N, 140.1°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.5					3.1	
01	260	3.4					2.5	
02	260	3.3					2.5	
03	250	3.3					2.4	
04	250	3.0					2.4	
05	250	3.0					2.5	
06	240	4.2					3.0	
07	250	4.8					3.5	
08	260	5.3					3.6	
09	260	5.4					4.1	
10	300	5.1					4.1	
11	300	5.0					3.8	
12	320	5.4					4.0	
13	300	5.2					3.5	
14	300	5.4					3.5	
15	300	5.2					3.4	
16	260	5.4					3.5	
17	240	5.3					3.5	
18	230	5.4					3.0	
19	240	5.2					3.0	
20	240	4.6					3.0	
21	250	4.0					3.4	
22	270	3.6					3.1	
23	270	3.6					3.0	

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 55

Tokyo, Japan (35.7°N, 139.5°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.4					2.5	3.0
01	260	3.2					2.5	3.0
02	270	3.2					2.5	3.0
03	240	3.3					2.5	3.1
04	260	3.0					2.9	3.1
05	270	3.0					2.5	3.0
06	240	4.5	230	---	130	1.7	3.0	3.3
07	250	5.4	240	3.5	120	2.3	3.5	3.4
08	250	5.7	230	4.0	110	2.6	4.4	3.5
09	280	5.5	200	4.0	110	2.8	4.0	3.4
10	290	5.6	200	4.2	110	3.0	4.2	3.3
11	320	5.3	200	4.3	110	3.0	3.2	3.1
12	340	5.4	210	4.4	110	3.2	3.5	3.0
13	310	5.6	220	4.2	110	3.0	3.2	3.1
14	310	5.5	230	4.1	110	3.0		3.2
15	300	5.5	240	4.0	110	2.7	3.2	3.1
16	270	5.5	240	3.7	120	2.5	3.2	3.2
17	260	5.8	240	3.2	120	1.9	3.2	3.2
18	240	6.0					3.2	3.3
19	230	5.5					3.2	3.25
20	230	4.5					3.0	3.15
21	260	3.6					3.0	3.0
22	280	3.5					3.0	2.9
23	280	3.5					2.6	2.9

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 56

Formosa, China (25.0°N, 121.5°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.8					3.0	3.1
01	260	3.7					3.4	(3.2)
02	260	4.0					2.8	3.2
03	260	3.6					2.6	3.4
04	260	2.8					2.4	3.2
05	250	2.7					2.1	3.3
06	240	4.0			---	---	2.1	3.4
07	230	5.7	220	---	120	2.1	3.4	3.7
08	260	5.8	220	4.0	120	2.6	4.2	3.4
09	300	6.0	220	4.2	120	3.0	3.7	3.3
10	310	7.2	220	4.4	---	---	4.0	3.1
11	320	7.8	210	---	---	---	3.6	3.0
12	310	9.7	220	---	---	---	3.6	3.1
13	280	11.2	---	---	---	---	3.8	3.3
14	280	10.5	240	4.3	110	3.2	3.3	3.2
15	280	9.8	240	4.2	110	---	3.3	3.3
16	270	9.4	220	3.9	---	---	3.4	3.3
17	240	9.6	240	3.7			3.4	3.6
18	220	8.7					2.9	3.6
19	210	6.8					3.0	3.55
20	240	4.9					3.2	3.2
21	280	4.1					2.4	3.1
22	310	3.6					2.3	2.95
23	(310)	(4.0)					(1.9)	---

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 57

Baguio, P. I. (16.4°N, 120.6°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.8					3.6	3.0
01	240	4.0					2.6	3.3
02	220	4.0					2.4	3.5
03	210	2.5					2.2	3.55
04	280	2.0					2.2	3.25
05	260	2.1					3.0	3.3
06	230	4.2					2.9	3.5
07	220	5.8			100	2.2	4.0	3.55
08	(300)	6.2	200	---	100	(2.5)	5.4	3.2
09	320	7.4	200	---	---	---	6.0	2.8
10	360	8.2	200	4.2	---	---	5.0	2.55
11	360	8.2	190	4.2	100	---	5.6	2.5
12	360	8.6	200	4.2	100	3.3	4.4	2.6
13	350	8.8	190	4.2	100	3.2	5.6	2.7
14	330	9.2	200	(4.2)	110	3.1	4.5	2.8
15	310	10.2	210	4.0	110	3.0	5.0	3.0
16	270	10.4	220	---	110	2.6	4.4	3.4
17	230	9.8	---	---	110	2.1	3.7	3.4
18	230	9.6					3.6	3.35
19	220	8.2					3.4	3.3
20	220	6.8					2.4	3.2
21	240	6.0					3.6	3.1
22	290	5.2					2.6	2.9
23	300	4.1					3.1	2.9

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 58

Leopoldville, Belgian Congo (4.3°S, 15.3°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M2000)F2
00	240	3.0						2.5
01	260	2.6						2.4
02	260	3.0					2.2	2.4
03	265	2.7					2.2	2.5
04	240	3.0					2.3	2.7
05	240	4.1					2.5	2.8
06	240	6.0	230	---	115	2.3	3.2	2.9
07	275	6.6	220	4.0	110	2.8	3.8	2.7
08	290	6.9	210	4.2	110	3.1	4.4	2.6
09	300	8.0	210	4.3	110	3.2	4.4	2.4
10	310	8.5	200	4.4	105	3.3	4.6	2.4
11	320	9.0	200	4.4	105	3.4	4.5	2.3
12	330	9.9	200	4.4	105	3.3	4.0	<2.3
13	340	9.8	200	4.3	105	3.2	3.8	2.2
14	330	10.2	200	4.1	110	3.0	3.9	2.2
15	305	11.0	250	4.0	110	2.6	3.4	2.3
16	290	11.0	250	---	---	2.1	3.0	2.3
17	250	10.8					2.7	2.4
18	240	10.8					2.4	2.5
19	225	10.0					2.2	<2.6
20	220	8.6						2.8
21	210	6.0						2.9
22	215	3.6						2.65
23	220	3.4						2.4

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 59

Rarotonga I. (21.3°S, 159.8°W) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.4						3.3
01	240	3.9						3.3
02	240	3.2						3.3
03	280	2.6						3.0
04	310	2.4						3.0
05	300	2.4						3.0
06	270	2.8						3.1
07	250	5.0	240	---	125	2.0	2.3	3.3
08	260	6.4	220	3.9	110	2.4	3.0	3.1
09	270	6.6	200	4.1	105	2.8	2.6	3.5
10	270	7.0	210	4.2	105	3.0	2.9	3.5
11	270	6.5	200	4.3	105	3.2	3.1	3.5
12	270	6.3	200	4.3	105	3.2	3.8	3.5
13	290	6.2	200	4.3	105	3.2	4.3	3.4
14	290	6.3	200	4.2	105	3.1	4.2	3.4
15	280	6.0	210	4.1	110	2.9	4.0	3.5
16	280	5.6	210	4.0	110	2.7	3.8	3.3
17	250	5.3	230	3.1	115	2.2	3.3	3.2
18	250	5.8			---	E	3.0	3.2
19	260	5.7					2.7	3.0
20	260	5.2					2.2	3.1
21	280	4.8						3.0
22	280	4.9						3.0
23	280	4.8						3.1

Time: 157.5°W.
Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 60

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	3.1						3.25
01	<240	3.0						3.25
02	220	2.8					1.7	3.2
03	230	2.7						3.1
04	<240	2.6						3.1
05	250	2.5						3.0
06	250	3.4						3.25
07	230	4.9	230	3.3	130	2.0		3.5
08	260	5.6	230	3.9	110	2.6		3.4
09	280	5.9	220	4.1	110	2.9		3.3
10	300	6.1	210	4.3	110	3.1		3.3
11	300	6.4	200	4.3	110	3.2		3.25
12	300	6.6	200	4.4	110	3.2		3.2
13	300	6.6	200	4.3	110	3.2	3.4	3.15
14	280	6.8	200	4.2	110	3.1	3.6	3.3
15	280	6.4	210	4.1	110	2.9	3.6	3.3
16	260	6.2	210	3.8	110	2.6	3.2	3.3
17	240	5.6	220	3.0	120	2.2		3.4
18	220	5.0						3.35
19	230	4.8						3.2
20	220	3.8						3.3
21	240	3.2						3.1
22	250	3.4						3.2
23	240	3.2						3.2

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 61

Watheroo, W. Australia (30.3°S, 115.9°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.1						3.1
01	250	3.2						3.2
02	240	3.2						3.2
03	220	3.1						3.2
04	250	3.0						3.1
05	250	2.8						3.0
06	250	2.9	---	---		1.3		3.2
07	250	4.0	250	(3.3)		1.7		3.3
08	300	4.7	240	3.7		2.3		3.3
09	310	5.0	220	4.0		2.8		3.2
10	350	5.0	210	4.2		3.0		3.2
11	350	5.2	210	4.2		3.0	3.4	3.1
12	330	5.6	210	4.2		3.1		3.1
13	300	5.7	210	4.2		3.2		3.25
14	300	5.5	210	4.1		3.0	3.2	3.3
15	300	5.2	200	4.0		2.9	3.0	3.3
16	290	5.3	220	3.7		2.6	2.6	3.3
17	250	4.9	220	3.0		2.1		3.3
18	240	4.3	---	---		1.6		3.4
19	240	3.8				---		3.2
20	250	3.5						3.1
21	250	3.4						3.1
22	250	3.2						3.1
23	250	3.2						3.1

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 2 minutes.

Table 62

Capetown, Union of S. Africa (34.2°S, 18.3°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.0						3.2
01	250	2.9						3.1
02	250	3.0						3.05
03	250	3.0						3.1
04	240	3.0						3.2
05	250	2.8						3.1
06	<260	2.8						3.1
07	230	4.0			---	1.6		3.4
08	250	5.0	240	3.6	120	2.2		3.5
09	280	5.4	240	3.8	120	2.6		3.4
10	290	5.6	230	4.1	110	2.9		3.3
11	310	5.7	220	4.2	110	3.0		3.2
12	320	6.2	220	4.3	110	3.1		3.1
13	310	6.8	220	4.2	110	3.1		3.1
14	290	7.3	220	4.2	110	3.1	3.4	3.2
15	280	7.0	230	4.1	110	3.0	3.3	3.3
16	270	6.5	220	3.9	120	2.7	3.4	3.3
17	250	6.1	220	3.5	120	2.4	3.0	3.4
18	230	5.7	220	2.6	130	1.9	2.3	3.4
19	220	5.0						3.4
20	220	4.0						3.3
21	240	3.0						3.2
22	250	3.1						3.2
23	250	3.0						3.2

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 63

Christchurch, New Zealand (43.6°S, 172.8°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	2.0						3.1
01	280	2.0						3.2
02	280	1.9					2.2	3.2
03	270	1.8						3.25
04	270	1.6						3.2
05	280	1.6						3.1
06	260	2.5				1.2		3.3
07	250	3.6	240	2.7		1.8		3.4
08	300	3.8	230	3.5		2.2		3.3
09	320	4.2	230	3.8		2.5		3.3
10	380	4.4	220	3.9		2.7		3.1
11	340	4.7	220	4.0		2.8		3.1
12	330	4.8	220	4.0		2.9		3.2
13	350	4.8	220	3.9		2.8		3.1
14	310	4.8	220	3.9		2.7		3.3
15	290	4.7	220	3.7		2.5		3.4
16	280	4.5	230	3.4		2.2		3.3
17	250	4.2	230	2.7		1.6		3.4
18	240	3.8	---	---				3.2
19	270	3.4						3.0
20	270	3.2						3.0
21	280	2.9						3.0
22	(280)	2.6						3.0
23	(280)	2.2						3.1

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 64

Decepcion I. (63.0°S, 60.7°W) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.0						(3.3)
01	260	3.0						(3.2)
02	260	2.8						(3.2)
03	270	2.9						(3.2)
04	270	3.0						(3.2)
05	250	3.0						(3.3)
06	240	3.2						(3.3)
07	230	4.4					2.6	3.4
08	220	4.8					3.3	(3.5)
09	220	5.6					3.6	(3.4)
10	220	5.6					4.0	(3.5)
11	220	6.1					4.1	(3.5)
12	220	6.0					3.9	(3.5)
13	220	5.8					3.7	(3.45)
14	220	5.1					3.3	(3.5)
15	220	5.4					3.2	(3.4)
16	220	5.2					2.7	(3.4)
17	230	5.0						(3.4)
18	230	5.0						(3.4)
19	230	4.3						(3.4)
20	250	3.6						(3.4)
21	250	3.8						(3.3)
22	250	3.3						(3.3)
23	250	3.2						(3.25)

Time: 60.0°W.
Sweep: 1.5 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 65

Resolute Bay, Canada (74.7°N, 94.9°W) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.6	---	---	---	---		3.4
01	250	3.6	---	---	---	---		3.3
02	250	3.5	---	---	---	---		3.3
03	260	3.5	230	---	---	1.8		3.3
04	270	3.6	220	---	---	1.8		3.3
05	280	3.7	220	2.9	120	1.9		3.35
06	300	3.7	210	3.1	110	2.0		3.2
07	380	3.8	230	3.2	110	2.1		3.1
08	370	3.9	220	3.3	110	2.2		3.1
09	380	3.8	210	3.5	110	2.5		3.1
10	400	4.0	210	3.6	110	2.6		3.0
11	390	4.0	210	3.6	110	2.7		3.0
12	380	4.2	210	3.7	100	2.7		3.0
13	400	4.1	210	3.7	100	2.7		3.0
14	400	4.1	200	3.7	100	2.7		3.0
15	380	4.0	210	3.6	110	2.6		3.1
16	370	4.0	210	3.4	110	2.4		3.0
17	370	3.9	210	3.3	110	2.1		3.1
18	320	4.0	220	3.2	120	2.1		3.2
19	300	3.9	220	3.1	120	2.0		3.2
20	280	4.0	220	2.9	120	2.0		3.3
21	250	3.8	220	---	---	1.8		3.3
22	250	3.7	230	---	---	1.8		3.4
23	250	3.8			---	1.8		3.3

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 66

Baker Lake, Canada (64.3°N, 96.0°W) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	3.3			---	E	6.5	3.1
01	240	3.0			---	E	4.3	3.15
02	250	2.9			---	E	4.0	3.0
03	260	3.0			---	(1.1)	5.0	3.0
04	260	3.0	230	---	110	1.4	4.5	3.1
05	280	3.0	230	2.6	100	1.7	3.4	3.0
06	420	3.3	200	3.0	100	2.0	3.7	2.8
07	(500)	<3.5	200	3.3	100	2.2	4.0	G
08	G	<3.6	200	3.4	100	2.5		G
09	G	<3.8	200	3.6	100	3.0		G
10	G	<3.9	210	3.8	100	3.0	4.7	G
11	G	<3.9	220	3.9	100	3.2	4.0	G
12	G	<4.0	230	3.8	100	3.2		G
13	480	4.1	210	3.8	100	3.0		2.65
14	450	4.3	220	3.8	100	3.0		2.7
15	380	4.5	220	3.8	100	2.9		2.9
16	380	4.4	220	3.7	100	3.0		2.8
17	370	4.5	220	3.6	100	2.9	4.1	2.9
18	310	4.4	220	3.5	110	2.7	5.4	3.0
19	280	4.3	210	3.1	110	2.2	6.9	3.1
20	260	4.0	240	---	110	1.9	9.0	3.1
21	260	3.9	---	---	110	1.7	8.0	3.1
22	260	3.5			120	1.3	9.0	3.15
23	250	3.2			160	(0.8)	8.0	3.05

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds, Aug. 1-11;
0.6 Mc to 10.0 Mc in 16 seconds, Aug. 11-31.

Table 67

Upsala, Sweden (59.8°N, 17.6°E) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	285	2.3					2.2	3.0
01	300	2.0					2.2	2.9
02	310	(1.7)					2.4	3.0
03	305	2.0			---	---	3.1	3.0
04	275	2.2	260	---	---	E	2.2	3.0
05	255	3.0	230	2.8	135	1.6	2.6	3.2
06	380	3.6	215	3.2	120	2.0	3.4	3.15
07	530	3.9	210	3.5	110	2.2	3.2	2.95
08	430	4.2	205	3.7	110	2.4	3.7	2.8
09	360	4.5	210	3.9	110	2.6	4.0	3.0
10	370	4.6	205	4.0	110	2.7	4.3	3.0
11	360	4.6	205	4.0	105	2.8	4.0	3.0
12	365	4.6	205	4.0	105	2.8	4.0	3.0
13	360	4.6	205	4.0	105	2.8	4.0	3.1
14	350	4.5	205	4.0	105	2.8	3.6	3.1
15	360	4.4	210	3.9	110	2.7	3.0	3.1
16	355	4.3	215	3.7	110	2.5		3.0
17	310	4.4	230	3.6	115	2.2	3.5	3.1
18	300	4.5	230	3.2	120	2.0	4.0	3.1
19	260	4.7	240	2.9	---	E	3.2	3.2
20	245	4.8	---	---	---	E	3.2	3.1
21	240	4.4					2.9	3.1
22	250	3.4					2.2	3.1
23	255	2.8					2.0	3.0

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 68

Churchill, Canada (58.8°N, 94.2°W) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.0			---	---	9.0	(3.2)
01	290	2.8			---	---	9.0	---
02	300	2.7			---	---	7.5	(3.1)
03	300	2.6			---	---	7.5	---
04	300	2.8			---	2.0	6.0	(3.2)
05	320	3.0	---	---	110	2.2	5.4	(3.3)
06	340	3.2	280	3.5	110	2.7	6.5	(2.5)
07	G	(3.5)	240	3.4	110	2.9	6.0	G
08	G	<3.7	260	3.6	110	3.0	6.0	G
09	G	<3.9	240	3.8	110	3.0	7.0	G
10	G	<3.9	210	3.8	110	3.0	5.4	G
11	540	<4.1	220	3.9	110	3.0	6.0	2.4
12	500	4.1	220	3.9	110	3.1	4.5	2.65
13	490	4.2	220	3.9	110	3.0	5.7	2.7
14	510	4.2	220	3.9	110	3.0	3.9	2.65
15	430	4.2	220	3.8	110	2.9	4.0	2.9
16	380	4.4	220	3.8	110	2.9		2.9
17	360	4.4	250	3.6	110	2.8	4.4	3.0
18	330	4.3	260	3.4	120	2.8	4.3	3.1
19	320	4.0	250	---	120	2.7	5.0	3.1
20	310	3.8			120	2.9	7.0	3.1
21	300	3.4			120	2.2	D	(3.2)
22	290	3.0			---	---	D	(3.3)
23	260	3.2			---	---	0	---

Time: 90.0°W.
Sweep: 0.6 Mc to 10.0 Mc in 16 seconds.

Table 69

Lindau/Harz, Germany (51.6°N, 10.1°E) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	255	3.2					3.1	3.2
01	250	3.0					3.1	3.1
02	255	2.8					3.1	3.1
03	250	2.8			---	E	3.3	3.1
04	260	2.7			---	E	3.6	3.2
05	250	3.0	---	---	---	E	3.5	3.3
06	300	3.5	215	3.1	---	1.7	4.2	3.3
07	335	3.8	215	3.5	115	2.2	4.8	3.1
08	350	4.2	210	3.7	105	2.6	4.8	3.1
09	345	4.6	205	3.9	105	2.7	5.0	3.2
10	325	5.0	200	4.0	100	2.9	5.4	3.3
11	345	4.8	200	4.1	100	3.0	5.0	3.2
12	320	4.9	200	4.2	100	3.0	4.8	3.3
13	350	4.8	200	4.2	100	3.0	5.2	3.2
14	350	4.6	200	4.1	100	3.0	4.7	3.1
15	350	4.6	205	4.0	105	2.9	4.5	3.1
16	340	4.5	205	3.9	105	2.7	4.3	3.2
17	315	4.6	220	3.7	105	2.4	4.2	3.2
18	290	4.8	225	3.4	115	2.0	3.8	3.3
19	270	5.1	230	---	---	E	>4.0	3.3
20	240	5.7			---	E	4.2	3.3
21	230	5.4					4.2	3.3
22	225	4.5					3.8	3.4
23	240	3.6					3.3	3.3

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 70

Winnipeg, Canada (49.9°N, 97.4°W) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	2.2					2.9	(3.0)
01	(320)	2.2					3.5	---
02	(320)	2.2					2.9	(3.0)
03	320	2.3					3.8	(3.0)
04	320	2.2					3.2	(3.0)
05	310	2.3	---	---	---	---	3.5	3.0
06	G	<3.0	230	3.0	120	1.8	3.0	G
07	G	<3.4	220	3.3	120	2.2		G
08	G	<3.6	200	3.6	110	2.5		G
09	G	<3.8	200	3.8	110	2.8	3.2	G
10	540	4.0	200	3.9	110	3.0		G
11	450	4.3	190	4.0	110	3.0	4.0	2.8
12	450	4.4	200	4.0	110	3.0		2.7
13	460	4.4	200	4.0	110	3.1		2.7
14	430	4.4	200	4.0	110	3.1		2.8
15	470	4.3	210	3.9	110	3.0		2.7
16	420	4.3	210	3.8	110	2.8		2.8
17	370	4.3	210	3.7	120	2.6		3.0
18	320	4.3	220	3.5	120	2.2		3.0
19	270	4.4	230	---	130	1.8		3.2
20	250	4.3			---	---		3.2
21	240	3.7					2.0	3.2
22	260	2.9						3.1
23	290	2.3						3.1

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 16 seconds.

Table 71

Ottawa, Canada (45.4°N, 75.9°W) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.0						3.0
01	350	1.8						(2.9)
02	(360)	1.6						(2.9)
03	(380)	(1.7)					3.2	---
04	---	(2.0)					3.6	---
05	280	2.3	---	---	---	---		3.1
06	G	<3.2	230	3.2	120	2.0		G
07	G	<3.8	210	3.5	110	2.3		G
08	450	4.0	210	3.7	110	2.7		2.8
09	400	4.3	210	3.9	110	2.9		2.8
10	380	4.5	200	4.0	110	3.0		3.0
11	400	4.5	200	4.1	110	3.1		2.9
12	440	4.6	200	4.1	110	3.3		2.8
13	430	4.6	200	4.1	110	3.3		2.8
14	420	4.5	210	4.0	110	3.2		2.8
15	410	4.4	220	4.0	110	3.0		2.8
16	390	4.3	220	3.8	110	2.8		2.9
17	350	4.5	220	3.6	110	2.5		3.0
18	300	4.6	230	3.2	120	2.0		3.1
19	250	4.8	---	---			2.1	3.2
20	240	4.7						3.2
21	250	3.9						3.1
22	260	3.0						3.1
23	290	2.4						3.1

Time: 75.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 72

Akita, Japan (39.7°N, 140.1°E) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.5					3.5	
01	280	3.4					3.6	
02	260	3.1					3.4	
03	260	3.2					3.1	
04	260	3.2					3.0	
05	250	3.4					3.5	
06	260	4.3					4.0	
07	280	5.0					4.6	
08	270	5.8					5.0	
09	280	5.4					6.5	
10	320	5.0					5.6	
11	350	4.9					5.2	
12	350	4.9					5.4	
13	340	5.1					5.0	
14	320	5.1					4.8	
15	320	5.0					4.6	
16	300	5.0					5.5	
17	300	4.9					5.2	
18	270	5.0					4.4	
19	240	5.8					5.3	
20	250	5.5					5.4	
21	250	5.1					4.2	
22	240	4.6					4.2	
23	250	3.8					4.2	

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 73

Nairobi, Kenya (1.3°S, 36.8°E) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	3.3						3.4
01	220	3.2						3.5
02	210	3.0						(3.4)
03	---	(2.6)						(3.2)
04	---	---					3.0	---
05	---	---					2.6	---
06	---	2.3					2.8	---
07	240	4.6	---	---	---	---	3.1	3.5
08	280	6.3	240	3.9	110	2.4	3.6	3.5
09	280	7.6	220	4.1	110	2.9	4.0	3.4
10	270	8.0	210	4.2	110	3.1	4.0	3.45
11	290	7.9	---	4.4	110	3.3	4.0	3.3
12	300	8.0	200	4.4	100	3.4	3.8	3.25
13	290	8.0	(200)	---	110	(3.4)		3.3
14	280	7.8	190	4.4	110	3.3		3.3
15	300	7.7	200	4.3	110	3.2		3.2
16	290	7.2	200	4.1	110	3.0		3.2
17	290	7.0	220	3.9	110	2.6	3.7	3.1
18	250	6.7	240	---	---	---	3.4	3.2
19	250	6.0					3.0	3.3
20	250	5.8					3.0	3.3
21	230	5.6					2.4	3.5
22	220	5.0						3.5
23	<220	4.0						3.5

Time: 45.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 74

Rarotonga I. (21.3°S, 159.8°W) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.1						3.1
01	280	2.8						3.2
02	260	3.0						3.3
03	260	2.8						3.3
04	250	2.5						3.3
05	250	2.3						3.3
06	290	2.3					2.2	3.0
07	250	4.1	240	2.5	---	E	2.5	3.45
08	260	5.1	210	3.7	115	2.2	2.9	3.5
09	290	5.3	210	3.9	110	2.6	2.9	3.4
10	290	5.9	210	4.0	105	2.9	3.1	3.4
11	270	6.0	210	4.1	105	3.1	3.6	3.55
12	270	5.6	200	4.2	105	3.1	3.9	3.5
13	280	5.5	200	4.2	105	3.1	4.2	3.5
14	290	5.7	200	4.1	105	3.0	4.0	3.4
15	280	5.7	200	4.0	105	2.9	4.0	3.4
16	270	5.5	220	3.8	110	2.7	3.7	3.3
17	250	5.3	230	3.3	115	2.2	3.2	3.4
18	230	5.2			---	---	3.0	3.4
19	230	4.9					2.8	3.3
20	240	4.0					2.3	3.3
21	260	3.2					2.0	3.05
22	280	3.2					2.1	3.1
23	280	3.2						3.1

Time: 157.5°W.
Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 75

Watheroo, W. Australia (30.3°S, 115.9°E) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.0						3.25
01	250	3.2						3.3
02	240	3.2						3.3
03	240	3.2					2.0	3.4
04	210	3.4						3.45
05	220	2.9						3.35
06	240	2.8						3.3
07	240	3.8	---	---		1.6		3.5
08	240	4.6	220	3.0		2.0		3.6
09	260	4.8	230	3.8		2.5	2.7	3.6
10	290	4.9	230	4.0		2.7	2.9	3.5
11	300	5.2	210	4.2		3.0	3.5	3.3
12	300	5.4	210	4.2		3.0	3.6	3.4
13	300	5.5	210	4.2		3.0	3.5	3.4
14	300	5.4	200	4.2		2.8	3.6	3.4
15	270	5.5	210	4.0		2.7	3.6	3.5
16	250	5.4	230	3.6		2.5	2.8	3.5
17	240	4.8	220	2.7		1.9	2.0	3.5
18	220	4.1						3.5
19	220	3.3						3.4
20	250	2.9						3.25
21	250	3.1						3.2
22	250	3.2						3.2
23	250	3.0						3.3

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 2 minutes.

Table 76

Tromso, Norway (69.7°N, 19.0°E) July 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.8	---	---	---	---	3.9	3.05
01	265	4.0	---	---	---	---	4.0	3.1
02	300	3.8	230	---	---	1.6	4.3	3.1
03	340	3.8	235	3.0	110	1.8	4.0	3.1
04	350	3.8	225	3.1	105	2.0	3.1	3.1
05	405	3.8	220	3.3	105	2.2	2.9	2.9
06	435	3.9	215	3.5	105	2.3	2.8	2.8
07	440	4.0	210	3.6	100	2.4	2.8	2.85
08	445	4.1	210	3.7	100	2.6	3.0	2.8
09	415	4.2	210	3.8	100	2.6	3.1	2.9
10	400	4.3	205	3.9	100	2.7	3.1	2.9
11	400	4.4	200	3.9	100	2.8	3.0	3.0
12	400	4.4	200	3.9	100	2.8	3.0	2.9
13	420	4.3	205	3.9	100	2.8	3.0	2.9
14	415	4.2	200	3.9	105	2.8	2.9	2.9
15	395	4.2	200	3.8	105	2.7	3.0	3.05
16	370	4.2	210	3.8	105	2.6	3.0	3.1
17	350	4.2	215	3.7	105	2.4	3.0	3.1
18	(340)	4.1	225	3.6	105	2.2	2.8	3.2
19	(350)	4.0	230	3.4	105	2.0	3.6	3.1
20	(300)	4.0	240	---	110	2.0	3.6	3.1
21	(290)	3.9	240	---	110	---	3.9	3.1
22	(260)	3.9	---	---	---	---	3.9	3.1
23	295	3.8	---	---	---	---	3.8	3.1

Time: 15.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 77

Oslo, Norway (60.0°N, 11.1°E) July 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	245	3.4						3.1
01	250	3.0					2.2	2.95
02	260	2.6					2.4	3.0
03	265	2.8	250	---	---	---	2.8	3.0
04	310	3.2	240	2.7	125	1.6	2.8	2.95
05	370	3.6	230	3.1	110	1.8	2.9	2.9
06	390	3.8	220	3.4	105	2.1	3.3	2.95
07	410	4.0	210	3.6	100	2.4	3.6	2.9
08	420	4.2	205	3.8	100	2.6	3.9	2.8
09	400	4.3	205	3.8	100	2.7	3.8	2.9
10	405	4.5	200	4.0	100	2.8	4.3	2.95
11	390	4.6	205	4.0	100	2.8	4.0	2.95
12	390	4.6	200	4.0	100	3.0	4.0	3.0
13	430	4.4	200	4.0	100	3.0	3.7	2.9
14	410	4.4	210	4.0	100	3.0	3.6	2.9
15	380	4.4	205	4.0	100	2.9	3.3	3.0
16	385	4.4	205	3.9	100	2.8	3.3	3.0
17	370	4.4	210	3.8	100	2.6	3.8	3.0
18	330	4.4	220	3.6	110	2.4	4.7	3.1
19	290	4.6	230	3.4	110	2.0	4.3	3.2
20	260	(4.4)	230	---	125	(1.8)	3.0	(3.3)
21	245	4.5	---	---	---	---	1.8	3.3
22	235	4.4					2.8	3.2
23	245	3.8					2.6	3.1

Time: 15.0°E.
Sweep: 0.6 Mc to 14.0 Mc in 8 minutes, automatic operation.

Table 78

Winnipeg, Canada (49.9°N, 97.4°W) July 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.2					3.0	3.1
01	(310)	2.0					3.0	(3.1)
02	300	1.9					3.2	(3.1)
03	330	2.0					3.8	---
04	310	2.0					4.1	3.1
05	280	<2.8	220	2.9	130	1.7	3.3	3.05
06	G	<3.2	220	3.1	120	2.0	3.6	G
07	G	<3.5	210	3.4	110	2.4	3.6	G
08	G	<3.7	210	3.6	110	2.6		G
09	G	<3.8	200	3.8	110	2.8	4.1	G
10	540	4.1	200	3.9	110	3.0	4.2	2.6
11	(530)	4.2	190	4.0	110	3.1	4.6	2.7
12	550	4.2	190	4.0	100	3.1		2.7
13	500	4.2	190	4.0	110	3.1		2.6
14	500	4.2	200	4.0	110	3.0		2.7
15	460	4.2	200	4.0	110	3.0		2.7
16	440	4.2	210	3.9	110	2.9		2.8
17	400	4.2	210	3.8	110	2.7		2.9
18	340	4.3	220	3.6	110	2.4	3.0	3.05
19	300	4.3	230	3.3	120	2.0	3.0	3.2
20	260	4.4	230	---	130	1.7		3.2
21	240	4.3						3.2
22	240	3.4						3.2
23	260	2.6						3.2

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 16 seconds.

TABLE 79

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C

NBS-D-3
Form adopted June 1946

IONOSPHERIC DATA

h' F2 (Characteristic), Km (Unit), January (Month), 1955

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., L.F.M., J.J.S.

Calculated by: E.J.W., J.W.P., L.F.M., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(280)A	280	260	240	230	230	220	(260)S	230	250	240	250	250	250	250	240	230	220	240	[270]A	260	250	250	250
2	250	270	280	270	260	250	220	250	230	230	240	280	250	240	250	230	220	220	240	(230)S	(270)S	(270)S	(280)S	(280)S
3	(260)S	(250)S	(270)S	260	250	250	230	230	220	220	250	240	270	250	250	230	230	220	210	230	(290)S	290	280	260
4	240	240	250	230	240	250	260	240	230	240	240	240	270	240	230	240	220	220	230	220	(330)S	(340)S	(310)S	(310)S
5	(310)S	(280)S	300	250	250	230	210	250	220	230	260	230	250	260	250	250	230	220	220	220	270	240	280	260
6	(300)A	270	270	260	230	230	220	[220]A	230A	220	240	250	260	250	250	250	230	220	220	220	230	250	250	(270)S
7	260	270	300	260	240	210	220S	250	220	230	250	240	240	280	290	250	230	230	220	230	230	280	250	240
8	(250)S	270	270	260	270	240F	250	220	210F	230	250	250	250	240	240H	240	230	240	220	230	(260)S	280	250	260
9	(280)S	(300)S	320)S	270	270S	250	220	(250)S	220	260	270	260	270	250	250	250	230	230	220	240	260	260	250	260F
10	290	260	250	270	260	250	260	270	230	(240)L	260	250	250	250	260	230	230	220	230	230	240	(290)S	290	270)S
11	(290)S	290	260	250	250	250	240	210	230	230	260	250	240	240	250	240	240	250	250	240	230	250	230	240
12	260	260	270	250	250	250	[240]S	(230)S	220	(260)L	230	240H	260	250	240	240	240	230	220	220	270	(300)S	(300)S	280
13	270	270	290)S	270	250	260	250	240	230	240	230	240	240	250	250	240	230	220	210	230	(200)S	(310)S	(290)S	(310)S
14	260	250	260	250	250	260	240	230	220	240	240	250	260	280	260	240	230	220	220	230	(250)S	(260)S	270	(270)S
15	[280]A	280	(240]A	280	280	250	240	(250)S	220	250	250	240	250	260	270	250	230	220	220	240	S	S	S	S
16	(300)S	S	S	(240)S	230)S	260	240	250	220	240L	240	250	260	270	250	240	230	230	220	220	220	(350)S	(250)S	(270)S
17	280)S	280)S	300	280	260	250	240	240	220	250	350	400	330	260	260	260	250H K	260K	260K	240K	250K	270K	(280)S K	(430)F K
18	310)F K	S K	S K	440)S K	S K	S K	S K	S K	260K	(270)L K	230K	250K	220K	250K	250K	240K	230	230	240	230	270	270	S	S
19	S	S	330)S	E K	E K	E K	E K	S K	260K	430K	790)S K	590K	450K	440K	360K	320K	270K	250K	230K	240K	S K	S K	(320)S K	S K
20	S K	S K	320)S K	270K	A K	A K	A K	270)S K	240K	220K	270K	270K	250K	270	270	260	250	230	240	230	250	(280)S	300)S	(280)S
21	320)S	(310)S	(300)S	300)S	330)S	270)S	270	270)S	220	220	240	260	270	250	[250]L	250	230	210	220	220	250	(280)S	S	S
22	S	300)S	290)S	260	280	250	240	240	210	230	230H	250	250H	250	250	240	220	210	210	240	250	(260)S	(280)S	(300)S
23	300)S	280)S	280	240	250	240	280)S	270)A	250	250	250H	230H	270	250	260H	250H	250	230	230	[230]A	230	A	A	S
24	S	S	320	300	280	250	240	250	230	230	250	230	260	240	240	240	220	210	230	220	240	(250)S	(290)S	280
25	250	290)S	280	270	250	230	250	230	210	220	240	250	250	250	280H	250	240	220	220	230	240	S	S	(280)S
26	280S	290)S	270)S	260	240	240	250	220	220	240	250	260	290H	260	250H	250	230H	220	220	230	(270)S	290	(290)S	290
27	270	260)S	260	260	250	240	240)S	250	230	230	240	250	250	250	250	(270)L	250	220	210	(240)S	240	270	(290)S	(300)S
28	280)S	240	250	240	240	260]A	280)S	270)S	240	(270)L	300	240	270	270	280	250	240	220	220	240	(260)A	(270)S	(300)S	(310)S
29	280	260	260	270	270	250	220	230	230	230	250	270	270	280	270	270	270	230	220	240	220	250	270	(280)S
30	280	270	270	270	250	240	240	230	230	230	230	250	250	260	250	250	230	220	210	220	240)S	270)S	(280)S	(270)S
31	280)S	270	260	250	240)S	240	(230)A	230	210	220	250	220	240	260	260	260	250	230	210	220	220	S	S	290
Median	280	270	270	260	250	250	240	240	230	230	250	250	250	250	250	250	230	220	220	230	250	270	(280)	(280)
Count	27	26	27	31	27	27	28	27	31	31	31	31	31	31	31	31	31	31	31	31	29	26	26	26

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-460 49

TABLE 80

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

NBS-D-3
Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), January (Month), 1955

Observed at Washington, D.C.

Lat. 38.7° N, Long 77.1° W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., L.F.M., J.J.S.

Calculated by: E.J.W., J.W.P., L.F.M., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.4 F	3.0 F	3.2 F	3.6 F S	(3.5) F S	2.8 F	(2.5) F	(2.2) F	4.6	5.2	5.8	6.2	6.0	6.3	5.9	5.3	4.7	4.5	3.5	[3.0] A	3.0	3.1	3.2	3.1
2	3.0	2.9 F	3.2 F	3.4	3.5	3.7 F	3.6	2.5	4.8	5.4	5.2	5.4	6.6	6.6	6.3	5.8 S	5.0	4.6 F	3.6 F S	2.7 H	2.3	2.2 S	2.2	2.3
3	2.3	2.4	2.4 F	3.0 F	3.2 F	3.3 F	3.1 F	(3.0) F	(5.0) J S	5.1	5.8	6.2	5.8	6.8	6.6	5.8 S	5.1	4.5	4.0	2.9 F	2.2	2.8 F	2.8 F	3.5
4	4.1	4.1	4.2	4.3 F	3.7 F	3.4 F	3.0 F	(2.1) S F	4.5 F	6.4	6.0	6.3	6.2	7.2	6.4	6.2 S	5.3 S	4.4 S	3.4 F S	2.7	1.8 F	(1.8) P S	1.8 S	(1.8) S
5	(4.4) S	2.0 F	(2.0) P S	(2.4) F	(2.4) P F	(2.4) F	(2.5) P F	(2.4) P S	4.6	6.1	6.4	7.0	6.2	6.0	5.6	5.8	5.6	(5.1) P S	4.3	3.1 F	2.6	2.7 F	2.6 F	3.2
6	2.9 F	(3.4) F	(3.6) F	(4.2) P S	4.2 F	3.8 F	3.2 F	2.4 F	5.2	5.6	6.4	5.8	6.0	6.3	6.0	6.2	5.5	5.6	4.7	3.9	2.4 F	2.7 F	2.6 F	2.7 F
7	2.4 F	(2.6) F	(2.1) F	(2.8) F	3.1 F	2.8	2.2 F	2.6 F	4.6	5.3	5.6	6.2	6.0	5.8	6.1	5.6	5.6 F S	5.4 S	4.8	3.7 F	2.8	2.6	2.9 F	2.8
8	2.5	2.5 F	(2.5) F	(2.6) F	(2.1) P F	(3.2) P F	(3.4) P F	(3.3) F	4.4 F	5.3	6.5	7.0	6.4	6.0	5.2 H	5.1	4.7	5.0	5.0 S	3.4 F	3.0 F	2.9 F	3.1 F	2.7 F
9	2.4 F	2.2 F	(1.9) F	(2.6) F	2.4 F	3.2 F	2.8 F	2.3	4.6	5.9	6.8	7.4	7.4	7.4	7.2	6.7	6.0	6.3	5.0	3.8	3.2 F	3.2 F	3.1 F	2.9 F
10	2.6 F	2.7 F	2.5 F	2.3 F	2.7 F	2.8 F	2.6 F	2.6 F	4.5	5.0	6.6	6.8	6.6	6.5	6.8	5.8	5.3	4.9	5.0	3.7	2.7 F	2.8 F	(2.8) F	(2.4) F
11	2.3 F	(2.4) F	3.5 F	3.7 F	(3.7) F	(3.5) F	3.5 F	(3.8) F S	4.9	5.2	5.8	7.4	7.0	7.0	6.3	6.3	5.4	5.8	6.0	5.1	5.0	4.3	3.2	3.1
12	3.0	3.1	3.2 F	3.2 F	3.2	3.0	(2.1) F S	(2.2) P S	4.2	(5.3) P S	7.2	7.2 H	6.4	7.0	6.7	6.0	5.6	5.8	5.2	3.3 F	2.4	2.3	2.5	2.7
13	2.8 F	2.6 F	2.4 F	2.8 F	3.0	2.9	2.9	3.0	4.5	6.2	6.6	7.2	6.6	6.6	6.4	6.2	5.7	5.0	3.8 S	2.7	2.0 S	2.0 F S	2.2	2.5
14	2.8 F	3.1 F	3.0 F S	3.0 S F	2.8 F S	2.8 F S	2.7	2.3 S	4.2	5.6	5.8	6.5	6.6	6.8	7.0	6.2	5.6	4.8	4.2	3.6	2.5	2.3	2.6	2.9
15	3.0	2.9	2.9 F	3.0	3.1	3.2	3.0	2.9	4.3	5.6	6.2	6.7	5.6	5.3	5.5	5.5	5.2	4.4	3.3	2.4	(1.7) S	1.6 J S	1.6 J S	(1.7) P S
16	(1.8) P S	1.7 J S	1.7 J S	(1.8) P S	2.0	2.0	2.9	2.9	4.1	5.5	6.2	6.0	5.7	6.7	7.0	6.2	5.7	5.0	4.5	4.2	2.8 F	2.3	2.1	2.2
17	2.4	2.4	2.6 F	(2.8) F	3.1 F	3.0	(2.7) P S	2.7 F	4.1	4.7	5.7	6.2 F	7.8 F	8.6	7.2	6.4	6.1 H K	6.6 K	7.0 K	6.7 K	5.8 K	(2.8) F K	(2.4) F P	(2.1) F K
18	K (2.5) P F	K (1.9) P F	K 2.0 F S	K (2.0) P F	K (1.7) J F	K (1.6) J F	K (1.5) J F	(2.2) F S	(3.3) F K	4.0 F K	(5.1) F K	6.1 F K	5.8 F K	6.8 F K	7.0 F K	6.3 K	5.4	5.5 F	(5.5) S P	4.5	3.1 F	2.4	(1.5) J S	(1.4) J S
19	(1.8) F	(1.8) D F	(1.7) F	< 1.0 E K	< 1.0 E K	< 1.0 E K	C K	(1.9) P S	3.0 K	3.4 K	(3.5) S K	3.9 K	4.0 K	4.2 K	4.4 K	4.4 K	4.9 K	4.8 K	5.4 K	2.8 F K	(1.8) F K	(1.7) F K	(2.1) P F	(1.8) F K
20	(1.8) F K	2.0 F K	1.9 F K	1.9 K	K (1.7) J A	A K	A K	2.1	4.1 K	4.1 K	5.0 K	6.3 K	6.1 K	5.2	5.3	5.4	5.0	4.7	4.1	3.8	2.7	2.1	1.9	(1.9) P F
21	(1.9) F S	[1.8] S	(1.8) P F	(1.9) P F	1.9 F	2.2 F	2.3 F	(2.2) P F	4.4	4.6	5.0	5.6	6.0	6.2	5.4	5.7	5.8	4.5 F	3.8 F S	(3.4) F S	2.6 A S	2.1 S	(1.8) F S	(1.9) S A
22	(1.9) F S	2.1	2.1 S	2.4	2.6	3.0	2.7	2.6	4.3	5.5	(4.8) H	6.3	(6.4) F H	5.8	5.5	5.3	5.5	4.4 F S	3.5 F S	3.1 F S	2.7	2.3	2.2	2.0
23	2.0 S	2.2	2.4	2.7	2.8	2.4 S	2.4	(2.8) P A	3.9 A S	4.2	4.7 H	5.7 H	5.4	6.0	5.8 H	(6.0) S H	5.4	5.5	4.2	[3.4] A	2.1	A	A	(1.8) P S
24	(1.9) J S	1.7 J S	(1.7) J S	(2.1) P S	2.4 F	2.8 F	2.5 F	(2.5) S	4.3	4.8	5.3	5.5	6.7	5.9	5.7	5.9	5.8	5.1	4.2	3.5	2.8	2.4	(2.4) J S	2.3
25	2.4	2.2	2.4	2.6	2.8	2.7	(2.6) J S	2.8	4.4	4.9	5.0	6.2	6.4	5.9	5.7 H	5.9	5.2	5.0	4.2	3.1	2.3	1.9	1.9 J S	2.1
26	2.3	(2.3) J S	2.3 S	2.4 J S	2.5	2.5	2.7	3.3 V	4.8	(5.1) S P	5.5	5.7 H	6.4 H	6.1	6.0 H	5.6	5.3 H	4.9	3.9	2.9	2.2	2.2	2.1	2.4
27	2.6	2.7	2.8	2.9	2.8	2.6	2.1	2.7	4.9	5.4	5.8	6.1	6.5	6.3	6.5	5.8	6.2	6.3	5.4 S	3.3	2.7	2.3	(2.6) P S	3.0
28	3.5	3.4	3.3	3.0	2.9	2.3 A	2.3	(2.5) J S	4.4	5.5 H	5.6	6.2	5.4	6.0	5.8	5.8	5.6	4.9	4.0	3.1	2.5	(2.0) A	1.9	2.2
29	2.4	2.6 J S	2.6	2.8	2.9	3.1	2.9	2.8	4.7	5.3	5.3	6.0	6.0	5.8	5.7	5.8	5.6	5.9	(4.6) P S	4.0	3.2	2.5	2.3	2.4
30	2.6	2.7	3.0	3.2	3.6	3.5	3.4	3.5	4.8	6.0	5.5	6.4	6.5 V	6.0	6.1	6.3	5.8	5.8	4.8	2.9	2.4	2.1	2.2	2.5
31	2.4	2.5 S	2.7	2.9	2.9	3.0	3.1	3.2	(5.2) P S	5.3	6.2	6.6	5.9	6.4	6.4	6.0	5.7	5.1 S	4.9	3.3	2.4	1.8	(1.9) P S	2.1
Median	2.4	2.5	2.5	2.8	2.9	2.9	2.7	2.6	4.5	5.3	5.8	6.2	6.2	6.3	6.1	5.8	5.5	5.0	4.3	3.3	2.6	2.3	2.2	2.4
Count	31	31	31	31	31	30	27	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	31

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-460 49

TABLE 81

Central Radio Propogation Laboratory, National Bureau of Standards, Washington 25, D.C.

NBS-D-3
Form adopted June 1946

IONOSPHERIC DATA

fo F2 (Characteristic), Mc (Unit), January (Month), 1955

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., L.F.M., J.J.S.

Calculated by: E.J.W., J.W.P., L.F.M., J.J.S.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	3.0 F	3.1 F	3.3	(3.4) F S	3.1 F S	2.7 F	2.2 F	3.3 F	5.0 F	5.6	6.3	6.0	6.1	6.2	5.6	4.8	4.5	4.2	3.0 F	2.9	2.9	3.3	3.2	3.1
2	3.0 F	3.0 F	3.2 F	3.3 F	(3.3) P F	(3.7) P F	2.5	3.4	5.5	5.4	5.0	6.2	6.4	6.2	6.3 F	5.7	4.5	3.8 F S	3.4 F S	2.3	2.2	2.1	2.3	2.3
3	2.4 F	2.4 F	2.6 F	3.2 F	3.2 F	3.3 F	(3.0) F	(3.8) F S	(5.1) P S	5.6	6.4	5.8	6.6	6.8	6.6	5.2	4.8	4.3 F	3.5	2.4	2.3	2.8 F	2.9 F	4.0 F
4	4.1	4.3	4.3 F	3.9 F	3.5 F	3.3	3.0	3.8	5.6	6.3	6.0	6.0 S	7.0	6.8	5.6 F	5.8 S	4.9 S	3.7 S	3.2 F S	2.0	(1.8) J S	1.8 S	1.8 S	(1.8) S
5	(2.0) J S	(2.1) J F	(2.2) F P	(2.8) P F	(2.9) F	(2.8) S	2.0	(3.5) S	5.2 S	5.9	7.2	6.4	6.1	6.0	5.7	(5.9) S	5.2	5.2	4.0	2.6	2.7	2.5 F	2.8 F	3.1 F
6	2.8 F	(3.4) F	4.0 F	4.2 F	4.2	3.3 F	2.9 F	3.9	6.1	6.2	6.0	5.8	6.2	6.0	6.2	6.0	5.6	5.0	4.4	3.3 F	2.8 F	2.7 F	2.7 F	2.8 F
7	2.7 F	(2.5) F	2.5) F	3.1 F	3.2	2.6	2.3	3.6	5.4	5.7	6.6	6.3	5.6	5.8 F	6.1	5.8	5.5 S	5.0	4.1	(3.3) F	2.5	2.7 F	2.8 F	2.5
8	2.4 F	2.5 F	(2.7) F	(2.6) F	(3.1) F	3.5 F	3.3 F	4.1 F	5.1	5.7	6.8	6.3	6.0	5.6	5.5	5.2	4.9	5.1	4.0	3.0 F	3.0 F	3.0 F	2.9 F	2.7 F
9	2.3 F	(1.9) F	(1.9) F	2.9 F	3.2 F	3.4 F	2.0	3.6	5.0	6.2	7.5	7.9	8.0	7.5	6.7	6.4	6.0	5.7	4.4	3.4	3.2 F	3.2 F	2.9 F	2.6
10	2.6 F	2.7 F	2.4 F	2.5	2.8 F	2.8 F	2.4 F	3.7 F	4.3	5.6	7.1	6.7	6.6	7.1	6.3	5.6	5.3 S	5.0	4.3	3.0	2.6 F	3.0 F	(2.6) F	(2.5) F
11	(2.5) F	3.0 F	3.7 F	3.7 F	(3.4) F	3.5 F	3.5 F	(3.9) F S	5.0	5.7	6.8	7.6	6.8	6.7	6.3	5.7	5.8	5.8	6.0	5.8	4.3	4.3	3.1 F	2.9 F
12	3.0	2.9 F	3.3 F	3.3	3.1	2.7 F	2.0 F	3.5	4.9	6.6	6.8 F	6.7	7.1	7.1	6.3	5.5	5.9	5.6	4.4	2.7	2.4	2.4	2.7	2.7 F
13	2.8	2.4 F	2.5 F	3.0 F	3.0	3.0	2.9	4.2	5.7	6.4	6.6	7.0	6.6	6.6	6.6	5.8	5.5 S	4.4 S	3.2 F S	2.2	2.0 F S	2.1) J S	(2.2) P S	2.7 F S
14	3.1 F	3.0 F	3.0 F S	2.9 F S	2.7 F S	2.7 F S	(2.3) F S	(3.3) F S	4.5	6.2	6.2	6.7	6.7	7.0	6.8	5.8	5.2	4.6	3.9	3.0	2.4	2.4	2.8	2.9
15	2.9	2.9	3.0	3.0	3.2	3.2	(2.6) P S	3.6	4.3	5.8	6.5	6.7	5.5	5.3 H	5.4	5.4	4.9	3.9	2.3	(1.9) P S	1.7 J S	1.6 J S	1.7 J S	(1.8) P S
16	1.8 J S	1.7 J S	1.7 J S	1.9	2.1	2.4	2.1	3.5	4.7	6.1	6.2	5.1	6.2	6.8	6.5	5.9	5.4	4.7	4.3	3.4	2.4	2.1 P S	2.1	2.4
17	2.6	2.4	2.6 F	3.0 F	3.2	2.9 F	2.4	3.5	4.4	4.5 H	5.4 H	6.2	8.4	8.0	6.6	6.3	5.8 K	6.8 K	7.0 K	6.2 K	(4.8) S K	(2.5) F K	K (2.2) P F	(2.0) F K
18	K (2.4) P F	F S K	F S K	K (1.9) P F	K (1.6) F S	K (1.0) J F	K (1.5) J S	2.7 F K	(3.8) F K	4.8 F K	5.8 F K	5.6 F K	5.8 K	7.0 IK	6.6 F K	5.6	5.2	5.2	5.5	3.6	2.8 F	(1.8) F S	(1.6) J S	(1.3) J S
19	[1.8] F B	[1.8] F B	< 1.0 E	< 1.0 E K	< 1.0 E K	C K	< 1.0 E K	2.6 K	3.3 IK	< 3.4 G K	3.8 K	4.0 S M	4.0 K	4.3 K	4.4 K	4.6 K	4.8 K	5.4 K	K 3.8 F S	K 2.1 S F	(1.7) S K	(1.8) F K	K 2.0) J S	1.8 F K
20	1.9 F K	(1.9) F K	2.0 K	1.8 K	A K	A IK	A K	3.4 K	4.3 K	5.2 K	5.6 K	6.2 K	5.7	5.0	5.4	5.3	5.0	4.4	3.9	3.3	2.3	2.1	2.1 J S	(1.9) P S
21	[1.8] S	(1.8) P S	(1.9) F S	1.8) F	2.1 F	2.2 F	(2.1) P F	3.6	4.6	4.8	5.3	5.3	6.0 F	5.6	5.6	5.8	5.3	4.2 F	(3.6) F	2.7 H S	[2.4] A S	(2.0) J S	[1.8] A	[1.9] A S
22	2.0 F	(1.9) S	2.3	2.5	2.8	2.9	2.5	3.8	4.7	4.4	5.8	6.6	5.8	5.8	5.2	5.5	4.8	4.2 F S	3.2 F S	3.0	2.5	2.2 J S	2.1	1.9 S
23	2.1 J S	2.2	2.5	2.6	2.8	2.4	2.6	(3.4) A	4.2	4.8	4.9	5.7	5.8	5.7	5.8	5.5	5.6	4.9	4.0 F	2.8	1.9	A	A	1.8) P A
24	1.9	(1.7) F B	(1.8) P F	(2.5) F	2.6 F	2.7 F	2.1	3.7	4.5	4.9	5.3	6.0	6.3	6.0	5.6	6.1	5.6	4.1	3.9	3.1	2.6	2.3	2.3	2.3
25	2.2	2.3 J S	2.6	2.7	2.8	2.6	(2.5) J S	3.8	4.7	5.0	5.3	6.5	6.3	6.0	6.1	5.3	5.3	5.0	3.5	2.6	2.2	(1.9) J S	2.0	2.2 J S
26	2.3	2.3	2.3	2.5 J S	2.5	2.6	2.9	3.9 S	5.0	5.3	5.7 H	5.9	6.1	5.8	6.5	5.9	5.7	4.5	3.4	2.4	2.2) J S	[2.2] A	2.3	2.4
27	2.6	(2.7) J S	2.9	2.9	2.9 F	2.5	2.1	3.8	5.2 J S	5.8	5.2	6.2	6.4	6.4 H	6.0	6.0	6.4	6.7	4.3	2.6	2.6	2.4	2.8	3.2
28	3.7 S	3.3	3.3	3.1	2.7	2.3	2.2	3.5	4.9	(5.2) P S	6.3	5.6	5.7	5.8	5.8	5.5	5.1	4.6	3.4	2.6	2.3	1.9	2.0	2.2 J A
29	2.5	2.5	2.7	2.9	2.9	3.1	2.5	3.9	4.7	5.4	5.5	5.8	5.7	5.7	5.5	5.4	5.9	(5.9) P S	4.3	4.0	2.5	2.3	2.4	2.4
30	2.8	2.9	3.1	3.4	3.6	3.5	3.2	4.4	5.7	5.5 H	6.3	6.7	6.0	6.4	6.3	6.2	5.8 S	5.3	3.7	2.5	2.2	2.1	2.4	2.6
31	2.6	2.5	2.8	2.9	3.0	3.1	3.1	4.4	5.7	5.6	6.4	(5.7 J H	5.9	6.4	6.3 H	6.0	5.6	4.9	3.9	3.2	2.1) J S	1.8	2.0	2.2 J S
Medion	2.5	2.5	2.6	2.7	3.0	2.8	2.7	3.6	4.9	5.6	6.2	6.2	6.1	6.2	6.1	5.7	5.3	4.9	3.9	2.9	2.4	2.2	2.3	2.4
Count	31	30	30	31	30	29	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	31

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-460 49

TABLE 82

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

NBS-D-3
Form adopted June 1946

h'F1 (Characteristic), Km (Unit) January (Month), 1955

IONOSPHERIC DATA

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Scaled by: E.J.W., J.W.P., L.F.M., J.J.S.

Calculated by: E.J.W., J.W.P., L.F.M., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									Q	230	220	190 H	200 H	190 H	190 H	230	Q							
2									Q	220	210	210	210 H	220	200	220	Q							
3									Q	210	200	200	200	220	220	220	Q							
4									Q	230	220	210	200	200 H	220	210	Q							
5									Q	240	220	220	200 H	190	220	230	240							
6									Q	210	210	200	200	200 H	220	220	Q							
7									Q	A	A	200	200 H	200 H	210	220	Q							
8									Q	A	210	200	210	210	200	200	Q							
9									Q	230	210	220	210	210	220	230	230 H							
10									Q	230	240	230	210	220	210	210	Q							
11									Q	220 H	230	210	200 H	180	210	220	Q							
12									Q	210 H	200 H	210	200	210	230	220	230							
13									Q	230	220	200	200	220	220	220	220							
14									Q	190 H	210	200 H	210	210 H	230	220	220							
15									Q	240	230	230	235 H	210	200	200 H	Q							
16									Q	220	210	210	200	220	210	200	220							
17									Q	220	220	210	220	230	[220] A	220	Q K							
18									Q K	210 F K	200 H K	190 H K	200 K	200 H K	220 H K	210 K	Q							
19									Q K	250 K	240 K	230 H K	230 K	210 K	240 K	230 K	250 K							
20									Q K	Q K	200 H K	210 H K	220 K	210	210	200	230							
21									Q	200	190 H	190 H	210 H	210	200	230	230							
22									Q	200 H	210	230	200 H	200	210	210	220							
23									A	220 H	220	210	210	(210) A	230	[220] A	210 H							
24									Q	Q	230	220	210	210	220	240	Q							
25									Q	210	210 H	250	230	200 H	200	210 H	220 H							
26									Q	220	190 H	190 H	200 H	210	210	230 H	220							
27									Q	220	220	200	210	230	200	210	230							
28									230	200	200	230 H	200	210 H	220	220	230							
29									Q	200 H	190 H	210 H	230	210	220	240	220							
30									Q	210 H	210	210 H	220	230	220	210	230							
31									Q	200 H	190 H	200 H	(180) H	210	230	230	210							
Median									—	220	210	210	200	210	220	220	220							
Count									1	27	30	31	31	31	31	31	18							

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-460 49

TABLE 83

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

NBS-D-3
Form adopted June 1946

IONOSPHERIC DATA

fo F1 (Characteristic), Mc (Unit), January (Month), 1955

Observed at Washington, D.C.

Lat 38.7°N, Lang 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., L.F.M., J.J.S.

Calculated by: E.J.W., J.W.P., L.F.M., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									Q	L	(3.7)L	(3.8)H	(3.9)H	L	L	L	Q							
2									Q	L	L	3.9	[3.8]L	(3.8)L	L	L	Q							
3									Q	L	3.6	3.7	4.0	3.8	L	L	Q							
4									Q	L	L	L	L	L	L	L	Q							
5									Q	L	(3.9)L	(3.9)L	L	L	L	L	L							
6									Q	L	L	(3.9)L	L	L	L	L	Q							
7									Q	A	L	L	L	L	L	L	Q							
8									Q	L	L	3.8	3.9	L	L	L	Q							
9									Q	L	L	L	3.9	L	L	L	L							
10									Q	L	L	L	4.0	4.2	L	L	Q							
11									Q	L	L	3.8	L	L	L	L	Q							
12									Q	L	L	(3.9)L	(3.9)L	L	L	L	L							
13									Q	L	(3.7)L	(3.8)L	L	L	L	L	L							
14									Q	L	L	L	(3.9)L	(4.0)L	L	L	L							
15									Q	L	L	L	(3.9)L	3.8	(3.6)L	L	Q							
16									Q	L	L	L	(3.9)L	L	L	L	L							
17									Q	L	(4.1)L	4.2	4.2	4.0	L	L	Q K							
18									Q K	L K	3.6 F K	L K	L K	L K	L K	L K	Q							
19									Q K	3.3 K	3.4 K	3.6 H K	3.7 K	3.7 K	3.7 K	3.5 K	L K							
20									Q K	Q K	(3.5)H K	(3.7)L K	3.9 K	3.8	L	L	L							
21									Q	L	L	(3.9)L	(4.0)L	(3.9)L	L	L	L							
22									Q	L	L	L	(3.8)S	(3.9)L	(3.8)L	L	L							
23									A	L	L	3.9	3.9	L	L	L	L							
24									Q	Q	L	3.9	3.9	L	L	L	Q							
25									Q	L	L	L	L	L	3.9	L	L							
26									Q	L	L	L	L	3.9	3.7	L	L							
27									Q	L	L	(3.9)L	(3.9)P	[3.7]L	3.5	L	L							
28									L	(3.7)L	3.8	(3.8)H	3.9	(3.8)L	3.7	L	L							
29									Q	L	L	3.9H	4.0	3.8	L	L	L							
30									Q	L	3.7	(4.0)L	4.1	(4.1)L	L	L	L							
31									Q	L	L	(4.1)L	4.1H	L	L	L	L							
Median									—	—	3.7	(3.9)	3.9	3.8	3.7	—	—							
Count										2	10	20	22	15	7	1								

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-460 49

TABLE 84

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

NBS-D-3
Form adopted June 1946

IONOSPHERIC DATA

h' E (Characteristic), Km (Unit), January (Month), 1955

Observed at Washington, D. C.

Lat 38.7° N, Long 77.1° W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., L.F.M., J.J.S.

Calculated by: E.J.W., J.W.P., L.F.M., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									S	(120)^{R}	(120)^{R}	120	120	120	110	110	(130)^{S}							
2									S	120	110	110	110	110	110	110^{H}	110							
3									S	120^{H}	110	110^{H}	110	100	110	110	(130)^{S}							
4									(130)^{S}	100^{H}	110	110	110	110	110	110	120							
5									S	R	R	120^{H}	110^{H}	110	110	120	120							
6									R	R	(100)^{R}	110^{H}	110	(110)^{R}	110^{H}	110	120							
7									S	R	R	R	110^{H}	120	120	120	120							
8									S	R	R	110	110	110	110	110	120^{H}							
9									S	120^{H}	120	110	110	(110)^{R}	110	110	120							
10									S	110^{H}	110	110	110	110	110	120	120							
11									S	(130)^{S}	120^{H}	120^{H}	110^{H}	110^{H}	110^{H}	110	130							
12									R	120^{H}	110^{H}	110^{H}	100	100^{H}	110^{H}	100^{H}	100							
13									140	110	110	110	110	100^{H}	100	100^{H}	120							
14									S	(120)^{R}	(120)^{R}	110^{H}	110	110	110	110	120							
15									S	110^{H}	(120)^{R}	[110]^{R}	100	100	[110]^{R}	120	(130)^{S}							
16									S	R	100	100	110	100^{H}	110	100	110							
17									S	110	110	110	110	110	110	110	S^{K}							
18									S^{K}	R^{K}	R^{K}	R^{K}	100$^{H}_{K}$	110$^{H}_{K}$	100$^{H}_{K}$	110$^{H}_{K}$	120^{H}							
19									(120)$^{S}_{K}$	120$^{H}_{K}$	110$^{H}_{K}$	110^{K}	110^{K}	110^{K}	110^{K}	110^{K}	110^{K}							
20									S^{K}	120^{K}	120$^{H}_{K}$	110$^{H}_{K}$	110$^{H}_{K}$	110	(110)^{R}	110	(120)^{S}							
21									R	R	120	[120]^{R}	110	110	110	110	120							
22									S	100	110	110	110	110	110	110^{H}	110^{H}							
23									R	R	B	120^{H}	110^{H}	110	110^{H}	110^{H}	120							
24									S	110	120	110	110	110	110	110	120							
25									S	120^{H}	110^{H}	110^{H}	110^{H}	110	110	110	120							
26									(140)^{S}	120^{H}	110^{H}	110	110^{H}	110	110	[110]^{R}	110^{H}							
27									(130)^{S}	120	110	100	100	110	110^{H}	100	110							
28									(120)^{S}	120	(120)^{R}	110^{H}	(120)^{R}	110	110^{H}	[120]^{R}	120^{H}							
29									S	110^{H}	110	110^{H}	110	110^{H}	110^{H}	120	(120)^{S}							
30									(130)^{S}	110	110	110	110	110^{H}	110	110	110							
31									(130)^{S}	110^{H}	110^{H}	100^{H}	100^{H}	100	110^{H}	110^{H}	100							
Median									(130)	120	110	110	110	110	110	110	120							
Count									8	23	26	29	31	31	31	31	30							

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-460 49

3-1

TABLE 85

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

NBS-D-3
Form adopted June 1946

IONOSPHERIC DATA

fo E (Characteristic), Mc (Unit), January (Month), 1955

Observed at Washington, D.C.

Lat 38.7°N, Lang 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., L.F.M., J.J.S.

Calculated by: E.J.W., J.W.P., L.F.M., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									S	2.3	2.6^{F}	2.8	2.8	2.8	2.6	2.3	(1.9)^{S}							
2									S	2.1	2.5	2.6	2.8	2.7	2.6	2.3^{H}	(1.9)^{S}							
3									S	2.3^{H}	2.6	2.8^{H}	(2.9)^{A}	2.8	2.7	2.4	1.8^{H}							
4									1.7	2.3^{H}	2.7	2.8	2.9	2.8	2.6	2.4	(2.0)^{P}							
5									S	A	A	2.9^{H}	2.9^{H}	2.8	2.7	2.4	1.8							
6									A	A	2.7^{H}	2.9^{H}	2.9	2.9	2.7^{H}	2.4	1.8							
7									S	A	A	A	2.8^{H}	2.8	2.7	2.4	(2.0)^{P}							
8									S	A	A	(2.8)^{P}	(2.8)^{P}	(2.7)^{P}	(2.7)^{P}	2.4	2.0^{H}							
9									S	2.3^{H}	[2.4]^{A}	(2.6)^{P}	2.8	2.8	2.6	[2.2]^{A}	1.9							
10									S	2.3^{H}	2.6	2.8	(2.8)^{F}	2.8	2.5	2.5	2.1							
11									S	2.4^{H}	2.7^{H}	2.7^{H}	2.9^{H}	(2.9)^{H}	(2.7)^{H}	2.4^{H}	2.0							
12									A	2.3^{H}	2.7^{H}	2.8^{H}	[2.8]^{A}	2.9^{H}	2.7^{H}	2.5^{H}	A							
13									1.8	(2.4)^{P}	2.7	2.9	2.9	2.9^{H}	2.7	2.5^{H}	2.1							
14									S	2.2	(2.6)^{A}	(2.8)^{A}	2.9^{H}	3.0	2.8	2.5	2.1							
15									S	2.3^{H}	2.7	(2.8)^{A}	2.9	2.9	[2.6]^{A}	2.4	2.1							
16									S	A	2.6	2.8	2.9	2.9^{H}	2.7	2.5	2.0							
17									S	2.2	2.5	2.7^{H}	2.8^{H}	2.6	2.6	(2.1)^{P}	S^{K}							
18									S^{K}	A^{K}	A^{K}	A^{K}	2.8$^{H}_{K}$	2.7$^{H}_{K}$	2.6$^{H}_{K}$	2.3$^{H}_{K}$	(2.0)^{H}							
19									1.8$^{H}_{K}$	2.4$^{H}_{K}$	(2.3)$^{P}_{K}$	2.6$^{F}_{K}$	2.8^{K}	2.6^{K}	(2.6)$^{P}_{K}$	(2.4)$^{F}_{K}$	2.0^{K}							
20									S^{K}	2.2^{K}	2.5$^{H}_{K}$	2.7$^{H}_{K}$	2.9$^{H}_{K}$	2.8	2.7	2.5	2.0^{H}							
21									A	A	(2.4)^{P}	A	S	2.7	2.6	2.4	2.0							
22									S	2.2^{H}	2.5	2.7	2.8	2.8	2.7	2.4^{H}	2.0^{H}							
23									A	A	B	2.7^{H}	2.8^{H}	2.8	2.7^{H}	2.4^{H}	2.0							
24									S	2.4	2.6	2.8	2.9	2.9	2.7	2.5	2.1							
25									S	2.3^{H}	2.5^{H}	2.8^{H}	2.8^{H}	[2.8]^{A}	2.7	2.5	2.1^{H}							
26									1.7	2.4^{H}	2.7^{H}	[2.8]^{A}	2.9^{H}	2.9	2.8	[2.5]^{A}	2.2^{H}							
27									1.7	2.3	2.5	2.8	2.9	2.9	2.7^{H}	2.5	2.0							
28									(1.7)^{S}	2.2	2.5^{H}	2.7^{H}	2.8	2.8	2.7^{H}	[2.4]^{A}	2.1^{H}							
29									S	2.2^{H}	2.4	2.7^{H}	2.8	2.8^{H}	2.7^{H}	2.5	2.2							
30									1.9^{H}	2.2	2.6	2.8	2.8	2.8^{H}	2.8	2.5	2.1							
31									1.9	2.3^{H}	2.6^{H}	2.8^{H}	2.9^{H}	2.7	2.7^{H}	2.4^{H}	2.2^{H}							
Median									1.8	2.3	2.6	2.8	2.8	2.8	2.7	2.4	2.0							
Count									8	33	26	28	30	31	31	31	29							

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-460 49

TABLE 86

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

NBS-D-3
Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc, Km (Unit) January (Month), 1955

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

Scaled by: E.J.W., J.W.P., L.F.M., J.J.S.

Calculated by: E.J.W., J.W.P., L.F.M., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.6 100	E	E	E	E	3.0 110 Y	3.8 100	4.0 100 H	3.1 100 H	3.0 100 Y	8.0 100 Y	G	G	G	G	G	2.9 100 Y	3.0 100	2.4 120	5.4 110	3.2 110	E	2.9 110 Y	3.0 100 Y
2	E	E	E	3.0 110	2.9 110 Y	2.3 110	E	E	G	G	G	G	G	3.0 120	G	G	3.2 110	3.2 110 H	2.8 110	E	E	E	E	E
3	E	E	E	E	E	E	E	4.0 110 Y	5.0 100 Y	3.8 100	7.4 100 H	3.5 130	2.0.0 110	3.2 100	4.9 110	4.0 110	9.0 110 Y	E	3.8 100	E	E	E	E	E
4	E	E	E	E	E	E	E	2.4 100	2.8 110	3.1 H 100 Y	3.6 120	4.4 110 Y	G	G	4.8 90 Y	G	G	E	2.9 110 Y	2.8 110	E	3.6 140 Y	3.1 100	E
5	E	E	E	E	E	E	2.4 110 H	2.4 110	4.8 Y 110	4.1 110	4.2 100	G	G	G	G	G	G	E	E	E	E	E	E	3.0 110
6	5.2 100	3.3 110	2.8 110	3.0 110	E	E	2.7 110	4.3 110	4.9 100	4.5 100 H	4.9 100	G	G	G	G	G	2.2 130	E	E	E	E	E	E	E
7	E	E	3.0 100	4.0 100	2.4 110	E	3.3 110	3.6 110	3.5 110	3.8 100	5.6 100	3.8 Y 100	5.2 110	G	G	G	G	E	E	E	E	2.5 100 Y	2.8 100	E
8	E	E	E	E	E	2.9 100 Y	3.7 100	3.4 100 Y	2.6 100 Y	3.7 100	4.2 100	G	G	G	G	G	G	E	E	E	E	E	E	E
9	E	E	E	E	2.3 110	2.5 100	2.4 100	E	G	3.8 120	3.2 120	2.8 120	3.0 120	3.2 110	2.9 110	3.0 110	G	E	E	E	E	E	E	3.1 100
10	2.9 100	2.0 100	E	E	E	E	3.0 110	3.7 100	G	G	G	G	3.1 120	G	3.6 110	G	G	E	E	3.1 110	E	E	E	E
11	E	E	E	E	2.7 110	2.6 110	2.2 110	2.2 100	2.6 100 Y	G	G	G	3.6 110	3.6 110	3.5 110	G	G	E	E	E	E	E	E	E
12	E	E	E	2.8 120	2.2 120	2.1 110	2.1 110	2.7 130	3.0 110	G	G	G	3.3 110	3.1 Y 100 H	G	G	1.9 110	3.5 100	2.4 100 H	1.8 100	3.5 100	2.9 100	2.8 100	E
13	E	E	E	E	2.8 110 H	2.3 110	2.4 110	2.4 110	G	3.2 110 H	G	G	G	3.4 130	G	G	G	E	E	E	E	2.5 120	E	E
14	E	E	E	E	E	2.4 110	2.1 110	E	4.3 110	3.8 110	3.6 110	7.0 120 Y	3.3 120 Y	G	G	G	G	3.1 100 Y	E	E	E	E	E	2.4 120
15	4.5 110	4.3 110	3.1 110	2.5 110	2.5 110	2.8 110	E	E	G	3.2 Y 130 H	8.0 110 Y	5.0 100	G	G	2.9 100 H	G	G	E	E	E	E	E	E	E
16	2.2 110	2.8 110	2.4 120 Y	E	2.2 120	E	E	E	G	3.7 100	G	G	G	G	G	G	G	2.9 100 Y	2.9 100	3.0 100	2.4 100 Y	E	E	E
17	E	E	2.7 100	2.3 100	2.8 100	E	2.2 110	E	G	G	G	G	G	7.4 Y 100 H	4.2 110	4.0 110 H	2.3 110	E	E	E	E	E	E	E
18	E	E	E	E	E	E	E	E	G	2.9 110	4.9 110 H	4.9 100	4.8 100	5.6 100	G	2.9 100	2.7 100	E	E	E	E	E	E	E
19	E	E	E	E	E	E	C	E	G	G	2.4 120	2.9 120	3.4 120	G	2.7 120	3.0 120 H	G	E	E	E	E	E	E	E
20	E	E	E	E	6.4 110	3.6 110	3.2 110	2.4 110	G	G	G	G	G	G	4.7 Y 110	3.6 Y 110	4.8 100 Y	E	E	2.4 110	E	3.0 120 H	3.1 110	E
21	E	E	E	E	3.5 Y 130 H	4.0 120	3.7 110	4.4 110	2.5 110	3.0 110 Y	G	2.7 100 Y	G	G	2.8 130	G	G	E	E	3.2 110	6.4 110	7.0 110	7.8 110	7.0 120
22	5.0 110 H	E	E	E	3.3 110	E	E	E	1.9 140	3.1 Y 100 H	G	G	G	G	G	G	G	3.1 Y 110 H	E	3.1 110	3.0 110	3.0 110	E	E
23	E	E	E	E	E	E	E	4.2 110	4.6 100	3.1 100	G	G	3.0 130	3.1 120	G	3.9 120	3.1 120	3.2 120	2.9 110	6.6 100	4.0 100 H	3.9 110	3.0 110	2.7 110 Y
24	2.5 100	E	E	E	2.5 120	5.0 110	4.0 110	E	2.7 110	3.2 100	G	3.3 110	3.1 110	3.1 130	5.0 110	2.9 130	4.2 120	3.1 120	E	E	E	4.4 100	E	E
25	E	E	E	E	E	E	E	7.0 Y 100	G	G	G	4.1 140	4.1 140	3.7 110	3.9 130	G	G	E	3.1 120	E	E	E	E	E
26	E	E	E	E	E	E	E	E	G	G	G	3.8 110	3.6 110 H	3.5 110	3.5 110	3.5 110	G	2.7 110	2.5 120	E	3.9 110	5.2 110	4.0 110	2.7 110
27	E	E	E	E	E	E	2.9 120	E	G	G	3.2 120	3.9 100	3.9 120	G	G	3.7 130 Y	G	E	E	E	E	E	E	E
28	E	E	E	E	3.9 120 H	3.9 100	E	E	G	G	3.1 110	G	3.4 110 Y	G	G	4.2 110	G	E	3.1 120	3.0 120	2.7 110	3.0 110	E	3.0 110
29	E	E	E	E	E	E	E	2.9 Y 110 H	G	2.8 120 Y	G	G	4.9 110 Y	G	G	3.7 130	G	2.3 110 Y	E	E	E	2.5 130	E	E
30	E	E	E	E	E	2.0 120	1.9 120	2.1 120	G	G	G	G	G	G	G	G	G	3.0 130 Y	2.3 130 Y	E	E	E	E	E
31	E	E	E	2.2 110	2.8 110	3.8 110 Y	3.1 110	E	2.8 110 H	3.1 110	3.3 110	G	G	G	4.0 130	4.0 120	3.4 120	2.7 120	E	2.7 110	E	E	E	E
Median	* *	* *	* *	* *	* *	* *	2.2	2.2	* *	3.0	* *	* *	3.0	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *	* *
Count	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

* * MEDIAN fEs LESS THAN MEDIAN foE, OR LESS THAN LOWER FREQUENCY LIMIT OF RECORDER

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-460 49

TABLE 87

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

NBS-D-3
Form adopted June 1946

IONOSPHERIC DATA

(M1500) F2 (Characteristic), (Unit), January (Month), 1955

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., L.F.M., J.J.S.

Calculated by: E.J.W., J.W.P., L.F.M., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.1 F	2.1 F	2.2 F	2.3 F S	(2.4) F S	2.3 F	(2.5) F	(2.2) F	2.5	2.4	2.5	2.4	2.4	2.4	2.5	2.5 S	2.4	2.3	2.3	A	2.2	2.2 S	2.2	2.2
2	2.1	2.2 F	2.0 F	2.2	2.1	2.2 F	2.5	2.2	2.4	2.5	2.6	2.2	2.4	2.4	2.4	2.5 S	2.5	2.4 F	2.2 F S	2.2 F	2.1	2.2 S	2.1	2.1
3	2.2	2.2	2.1 F	2.1 F	2.2 F	2.2 F	2.2 F	(2.3) F	J S	2.6	2.4	2.5	2.3	2.3	2.4	2.6	2.4	2.4	2.4	2.4 F	2.0	2.0 F	2.1 F	2.1
4	2.2	2.2	2.2	2.2 F	2.2 F	2.1 F	2.2 F	(2.2) F S	2.3 F	2.5	2.5	2.5	2.3	2.4	2.5	2.4 S	2.5 S	2.4 S	2.3 F S	2.4	2.0 F	(2.0) P S	2.1 S	(2.1) S
5	(2.0) S	2.1 F	(2.0) F S	(2.1) F	(2.1) P F	(2.4) F	(2.6) P F	(2.2) P S	2.5	2.6	2.3	2.5	2.4	2.3	2.4	2.4	2.3	(2.3) P S	2.3	2.3 F	2.1	2.3 F	2.0 F	2.1
6	2.2 F	(2.2) F	(2.2) F	(2.2) P S	2.2 F	2.3 F	2.3 F	2.2 F	2.4	2.5	2.4	2.4	2.3	2.4	2.3	2.4	2.3	2.4	2.3	2.5	2.3 F	2.2 F	2.2 F	2.0 F
7	2.2 F	(2.2) F	(2.1) F	(2.2) F	2.2 F	2.6	2.3 F	2.3 F	2.4	2.6	2.4	2.4	2.4	2.3	2.2	2.4	2.3 F S	2.3 S	2.3 S	2.3 F	2.3	2.0	2.2 F	2.2
8	2.1	2.1 F	(2.1) F	(2.1) P F	(2.1) P F	(2.1) P F	(2.3) P F	(2.5) F	2.6 F	2.5	2.4	2.4	2.5	2.6	2.4 H	2.4	2.4	2.3	2.4 S	2.2 F	2.1 F	2.0 F	2.2 F	2.1 F
9	2.0 F	2.0 F	(1.9) F	(2.0) F	2.0 F	2.2 F	2.5 F	2.1	2.4	2.4	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.1 F	2.1 F	2.2 F	2.2 F
10	2.1 F	2.1 F	2.1 F	2.0 F	2.0 F	2.2 F	2.2 F	2.2 F	2.5	2.4	2.3	2.4	2.4	2.4	2.3	2.4	2.4	2.4	2.5	2.4	2.2 F	2.0 F	(2.1) F	(2.1) F
11	2.2 F	(2.1) F	2.1 F	2.1 F	(2.1) F	(2.1) F	2.2 F	(2.3) F S	2.6	2.5	2.3	2.3	2.5	2.4	2.3	2.4	2.2	2.2	2.1	2.1	2.4	2.2	2.2	2.3
12	2.0	2.1	2.2 F	2.2 F	2.1	2.1	(2.4) F S	(2.3) P S	2.4	(2.3) P S	2.5	2.4 H	2.3	2.3	2.5	2.5	2.3	2.4	2.3	2.4 F	2.1	2.0	1.9	2.0
13	2.1 F	2.1 F	2.0 F	2.1 F	2.2	2.0	2.1	2.3	2.4	2.4	2.5	2.4	2.4	2.4	2.3	2.4	2.4	2.5	2.5 S	2.4	2.0 S	1.9 F S	2.0	2.0
14	2.0 F	2.2 F	2.0 F S	2.1 F S	2.1 F S	2.1 F S	2.3	2.4 S	2.5	2.5	2.5	2.3	2.3	2.2	2.3	2.4	2.5	2.4	2.3	2.4	2.2	2.1	2.1	2.1
15	2.0	2.1	2.1 F	2.1	2.1	2.1	2.2	2.2	2.5	2.4	2.4	2.5	2.5	2.4	2.4	2.4	2.5	2.4	2.4	2.3	(2.3) S	J S	J S	P S
16	(2.1) P S	J S	J S	(2.1) P S	2.1	2.2	2.3	2.2	2.4	2.3	2.3	2.4	2.1	2.2	2.3	2.4	2.4	2.4	2.3	2.4	2.4 F	2.2	2.2	2.1
17	2.0	2.0	2.0 F	(2.0) P F	2.1 F	2.2	(2.2) P S	2.3 F	2.4	2.2	1.9	1.7 F	1.9 F	2.1	2.3	2.3	2.1 K H	2.0 K	2.0 K	2.1 K	2.0 K	(2.1) F K	(2.2) F P	F K
18	K (2.0) P F	K (1.4) P F	F S K	(1.7) P F	J F K	J F K	J S K	(1.8) F S	(2.3) F K	2.2 F K	(2.3) F K	2.5 F K	2.6 F K	2.3 F K	2.3 F K	2.5 K	2.4	2.3 F	(2.2) P S	2.3	2.0 F	2.2	J S	J S
19	(2.0) F	F B	(1.9) F	E K	E K	E K	C K K	(1.9) P S	2.1 K	1.9 K	S K	1.7 K	1.8 K	1.8 K	2.0 K	2.1 K	2.2 K	2.0 K	2.4 K	2.3 F K	(2.1) F K	(2.2) F K	(2.0) P F	F K
20	F K	1.8 F K	2.0 F K	2.1 K	J A K	A K	A K	2.1 K	2.5 K	2.6 K	2.3 K	2.3 K	2.4 K	2.4	2.2	2.3	2.4	2.4	2.2	2.3	2.2	2.1	2.1	(2.3) F E
21	(2.0) P S	S	(2.1) P F	(2.1) P F	2.2 F	2.2 F	2.3 F	(2.2) P F	2.6	2.7	2.5	2.4	2.3	2.4	2.2	2.4	2.5	2.5 F	2.3 F S	(2.4) F S	2.2 A S	2.2 S	(2.1) F S	(1.9) S A
22	(2.0) F S	2.1	2.1 S	2.2	2.1	2.2	2.2	2.3	2.6	2.7	(2.3) H	2.5	(2.3) F H	2.5	2.5	2.6	2.6	2.5 F S	2.3 F S	2.3 F S	2.2	2.2	2.1	2.1
23	2.1 S	2.1	2.2	2.2	2.1	2.3 S	2.0	(2.1) P A	2.4 A S	2.4	2.4 H	2.2 H	2.3	2.5	2.4 H	(2.5) S H	2.2	2.4	2.3	A	2.5	A	A	(2.0) P S
24	J S	J S	J S	(2.0) P S	2.1 F	2.2 F	2.4 F	(2.3) S	2.5	2.5	2.5	2.4	2.4	2.5	2.3	2.5	2.4	2.6	2.3	2.4	2.3	2.2	(2.0) J S	2.1
25	2.2	2.1	2.1	2.1	2.2	2.4	(2.2) J S	2.3	2.7	2.6	2.4	2.4	2.4	2.4	2.1 H	2.4	2.4	2.3	2.3	2.3	2.4	2.1	J S	2.1
26	2.1	(2.1) J S	2.1 S	(2.2) S J	2.3	2.1	2.2	2.3 V	2.5	(2.6) S P	2.5	2.4 H	2.2 H	2.4	2.2 H	2.3	2.3 H	2.4	2.4	2.3	2.2	2.2	2.1	2.1
27	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.2	2.5	2.5	2.4	2.4	2.4	2.3	2.4	2.2	2.3	2.3	2.5 S	2.0	2.2	2.1	(2.0) P S	1.9
28	2.0	2.2	2.2	2.2	2.2	2.1 A	2.2	J S	2.4	2.1 H	2.3	2.6	2.4	2.3	2.4	2.4	2.5	2.4	2.3	2.3	2.3	(2.1) A	2.0	1.9
29	2.1	(2.1) J S	2.1	2.1	2.1	2.2	2.4	2.3	2.5	2.6	2.5	2.3	2.3	2.2	2.4	2.3	2.3	2.5	(2.2) P S	2.2	2.4	2.3	2.1	2.1
30	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.6	2.7	2.3	2.3	2.3 V	2.4	2.4	2.4	2.4	2.5	2.5	2.3	2.2	2.2	2.1	2.1
31	2.1	2.1 S	2.1	2.2	2.1	2.2	2.4	2.3	(2.6) P S	2.7	2.4	2.6	2.5	2.4	2.3	2.3	2.4	2.5 S	2.5	2.3	2.5	2.3	(2.1) S P	2.1
Median	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.5	2.5	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.1	2.1
Count	24	27	28	30	28	29	28	30	30	31	30	31	31	31	31	31	31	31	31	29	31	29	27	27

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-460 49

TABLE 88

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

NBS-D-3
Form adopted June 1946

IONOSPHERIC DATA

(M3000) F2 (Characteristic), _____ (Unit), January (Month), 1955

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., L.F.M., J.J.S.

Calculated by: E.J.W., J.W.P., L.F.M., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.1 F	3.1 F	3.2 F	3.4 F S	(3.5) F S	3.4 F	(3.6) F	(3.2) F	3.6	3.5	3.6	3.5	3.5	3.5	3.6	3.6	3.5	3.4	3.4	R	3.2	3.3	3.2	3.3
2	3.1	3.2 F	3.0 F	3.2	3.1	3.2 F	3.6	3.3	3.5	3.6	3.7	3.3	3.5	3.5	3.5	3.6 S	3.6	3.5 F	3.3 F S	3.2 F	3.1	3.1 S	3.1	3.1
3	3.2	3.2	3.1 F	3.1 F	3.2 F	3.3 F	3.3 F	(3.4) F	J S	3.7	3.4	3.6	3.3	3.4	3.4	3.6	3.5	3.4	3.5	3.5 F	3.0	3.0 F	3.1 F	3.1
4	3.2	3.2	3.2	3.3 F	3.3 F	3.1 F	3.3 F	(3.3) F S	3.4 F	3.6	3.6	3.6	3.4	3.5	3.6	3.5 S	3.6 S	3.5 S	3.3 F S	3.5	3.0 F	(3.0) P S	3.1 S	(3.1) S
5	(3.0) S	3.1 F	(3.0) F S	(3.1) F	(3.1) P F	(3.5) F	(3.7) P F	(3.3) P S	3.6	3.7	3.4	3.6	3.5	3.4	3.5	3.4	3.4	(3.4) P S	3.4	3.3 F	3.1	3.4 F	3.0 F	3.1
6	3.2 F	(3.2) F	(3.2) F	(3.2) P S	3.3 F	3.4 F	3.4 F	3.2 F	3.5	3.6	3.5	3.5	3.4	3.5	3.3	3.5	3.4	3.4	3.4	3.6	3.4 F	3.3 F	3.2 F	3.0 F
7	3.2 F	(3.2) F	(3.1) F	(3.2) F	3.3 F	3.7	3.3 F	3.2 F	3.5	3.7	3.5	3.5	3.5	3.3	3.3	3.4	3.4 F S	3.4 S	3.4	3.4 F	3.4	3.0	3.2 F	3.2
8	3.2	3.2 F	(3.1) F	(3.1) P F	(3.1) P F	(3.2) P F	(3.3) P F	(3.6) F	3.7 F	3.6	3.5	3.5	3.5	3.7	3.4 H	3.5	3.4	3.4	3.5 S	3.3 F	3.1 F	3.0 F	3.2 F	3.2 F
9	3.0 F	2.9 F	(2.9) F	(3.0) F	3.0 F	3.2 F	3.6 F	3.1	3.5	3.5	3.3	3.3	3.2	3.3	3.4	3.4	3.4	3.4	3.3	3.2	3.1 F	3.1 F	3.2 F	3.3 F
10	3.1 F	3.1 F	3.1 F	3.0 F	3.0 F	3.3 F	3.3 F	3.3 F	3.6	3.5	3.4	3.4	3.5	3.5	3.3	3.5	3.5	3.5	3.6	3.5	3.2 F	3.0 F	(3.1) F	(3.1) F
11	3.2 F	(3.1) F	3.2 F	3.2 F	(3.2) F	(3.1) F	3.2 F	(3.4) F S	3.7	3.5	3.4	3.4	3.5	3.5	3.4	3.4	3.2	3.2	3.1	3.1	3.5	3.2	3.2	3.3
12	3.0	3.1	3.2 F	3.2 F	3.1	3.1	(3.5) F S	(3.4) P S	3.5	(3.3) P S	3.6	3.4 H	3.4	3.4	3.6	3.6	3.3	3.4	3.4	3.5 F	3.1	3.0	2.9	3.0
13	3.1 F	3.1 F	3.0 F	3.1 F	3.2	3.0	3.1	3.3	3.5	3.4	3.6	3.5	3.5	3.4	3.4	3.5	3.5	3.5	3.6 S	3.4	3.0 S	2.9 F S	3.0	3.0
14	3.0 F	3.2 F	3.0 F S	3.1 F S	3.1 F S	3.1 F S	3.4	3.5	3.6	3.6	3.6	3.4	3.4	3.3	3.3	3.5	3.5	3.4	3.4	3.4	3.3	3.1	3.1	3.1
15	3.0	3.1	3.1 F	3.1	3.1	3.1	3.3	3.3	3.6	3.5	3.5	3.6	3.6	3.4	3.4	3.5	3.5	3.5	3.5	3.4	(3.3) S	J S	J S	P S
16	(3.1) P S	J S	J S	(3.1) P S	3.2	3.2	3.4	3.3	3.5	3.4	3.3	3.5	3.1	3.2	3.4	3.4	3.5	3.5	3.4	3.5	3.4 F	3.3	3.2	3.1
17	3.0	3.0	3.0 F	(3.0) P F	3.2 F	3.3	(3.3) P S	3.3 F	3.5	3.2	2.8	2.6 F	2.9 F	3.1	3.3	3.3	3.1 H K	3.0 K	3.0 K	3.1 K	3.0 K	(3.1) F K	(3.2) F P	F K
18	K (3.0) P F	K (2.8) P F	F S K	K (2.7) P F	J F K	J F K	J S K	K (2.7) F S	(3.4) F K	3.2 F K	(3.4) F K	3.5 F K	3.6 F K	3.4 F K	3.4 F K	3.6 K	3.5	3.3 F	(3.2) S P	3.4	3.0 F	3.3	J S	J S
19	(2.9) F	F B	(2.9) F	E K	E K	E K	C K	K (2.9) P S	3.1 K	2.8 K	S K	2.6 K	2.7 K	2.8 K	3.0 K	3.1 K	3.3 K	3.0 K	3.4 K	3.3 F K	(3.1) F K	(3.3) F K	(3.0) P F	F K
20	F K	2.7 F K	2.9 F K	3.1 K	J H K	A K	H K	3.1 K	3.6 K	3.7 K	3.4 K	3.4 K	3.4 K	3.5	3.3	3.4	3.5	3.5	3.2	3.3	3.2	3.1	3.1	(3.3) P F
21	(3.0) P S	S	(3.1) P F	(3.1) P F	3.2 F	3.2 F	3.3 F	(3.3) P F	3.6	3.8	3.6	3.5	3.4	3.5	3.2	3.5	3.6	3.6 F	3.3 F S	(3.5) F S	3.3 R S	3.2 S	(3.1) F S	(2.9) S R
22	(3.0) F S	3.1	3.2 S	3.3	3.1	3.3	3.3	3.4	3.7	3.8	(3.4) H	3.6	(3.4) F H	3.6	3.5	3.7	3.7	3.6 F S	3.4 F S	3.3 F S	3.3	3.3	3.2	3.1
23	3.1 S	3.1	3.2	3.3	3.1	3.3 S	3.0	(3.1) P B	3.5 R S	3.5	3.5 H	3.2 H	3.4	3.5	3.5 H	(3.6) S H	3.2	3.5	3.4	R	3.6	R	R	(2.9) P S
24	J S	J S	J S	(3.0) P S	3.1 F	3.3 F	3.4 F	(3.3) S	3.6	3.6	3.6	3.5	3.5	3.6	3.4	3.6	3.5	3.7	3.4	3.5	3.4	3.3	(3.0) J S	3.1
25	3.3	3.1	3.1	3.1	3.2	3.4	(3.2) J S	3.4	3.8	3.7	3.5	3.5	3.5	3.5	3.1 H	3.5	3.4	3.4	3.4	3.4	3.4	3.1	J S	3.1
26	3.1	(3.1) J S	3.1 S	(3.2) J S	3.3	3.1	3.2	3.4 V	3.6	(3.7) S P	3.6	3.5 H	3.2 H	3.4	3.3 H	3.4	3.4 H	3.5	3.4	3.4	3.2	3.2	3.1	3.1
27	3.1	3.1	3.1	3.1	3.1	3.4	3.4	3.2	3.6	3.6	3.5	3.5	3.5	3.4	3.5	3.3	3.3	3.4	3.6 S	3.0	3.3	3.1	(3.0) P S	2.9
28	3.0	3.2	3.2	3.3	3.3	3.1 R	3.2	J S	3.5	3.1 H	3.3	3.7	3.4	3.4	3.4	3.5	3.6	3.5	3.4	3.4	3.3	(3.2) R	3.0	2.9
29	3.1	(3.2) J S	3.2	3.2	3.1	3.3	3.4	3.4	3.6	3.7	3.5	3.4	3.4	3.3	3.5	3.4	3.4	3.6	(3.3) P S	3.2	3.5	3.3	3.1	3.1
30	3.0	3.1	3.1	3.2	3.1	3.2	3.3	3.4	3.7	3.8	3.4	3.4	3.3 V	3.4	3.5	3.5	3.5	3.6	3.6	3.4	3.3	3.2	3.1	3.1
31	3.1	3.1 S	3.1	3.2	3.2	3.3	3.4	3.4	(3.7) P S	3.8	3.5	3.6	3.5	3.5	3.3	3.3	3.4	3.6 S	3.6	3.4	3.6	3.4	(3.1) P S	3.1
Median	3.1	3.1	3.1	3.1	3.15	3.25	3.3	3.3	3.6	3.6	3.5	3.5	3.4	3.4	3.4	3.5	3.5	3.5	3.4	3.4	3.3	3.2	3.1	3.1
Count	29	27	28	30	28	28	28	30	30	31	30	31	31	31	31	31	31	31	31	29	31	29	27	27

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-460 49

TABLE 89

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C

NBS-D-3
Form adopted June 1946

IONOSPHERIC DATA

(M3000) F1 (Characteristic), ____ (Unit), January (Month), 1955

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., L.F.M., J.J.S.

Calculated by: E.J.W., J.W.P., L.F.M., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									Q	L	(39)L	(39)H	(40)H	L	L	L	Q							
2									Q	L	L	38	L	(38)L	L	L	Q							
3									Q	L	39	39	35	38	L	L	Q							
4									Q	L	L	L	L	L	L	L	Q							
5									Q	L	(39)L	(39)L	L	L	L	L	L							
6									Q	L	L	(39)L	L	L	L	L	Q							
7									Q	A	L	L	L	L	L	L	Q							
8									Q	L	L	40	39	L	L	L	Q							
9									Q	L	L	L	38	L	L	L	L							
10									Q	L	L	L	39	39	L	L	Q							
11									Q	L	L	38	L	L	L	L	Q							
12									Q	L	L	(38)L	(39)L	L	L	L	L							
13									Q	L	(39)L	(39)L	L	L	L	L	L							
14									Q	L	L	L	(38)L	(38)L	L	L	L							
15									Q	L	L	L	(40)L	40	(39)L	L	Q							
16									Q	L	L	L	(40)L	L	L	L	L							
17									Q	L	(33)L	32	34	35	L	L	Q K							
18									Q K	L K	39 F K	L K	L K	L K	L K	L K	Q							
19									Q K	35 K	37 K	37 H K	37 K	35 K	35 K	36 K	L K							
20									Q K	Q K	(38)H K	(36)L K	38 K	38	L	L	L							
21									Q	L	L	(38)L	(37)L	(38)L	L	L	L							
22									Q	L	L	L	(38)S	(39)L	(39)L	L	L							
23									A	L	L	36	38	L	L	L	L							
24									Q	Q	L	40	39	L	L	L	Q							
25									Q	L	L	L	L	L	38	L	L							
26									Q	L	L	L	L	38	40	L	L							
27									Q	L	L	(39)L	40 F	L	41	L	L							
28									L	(38)L	38	(39)H	39	(39)L	39	L	L							
29									Q	L	L	38 H	38	39	L	L	L							
30									Q	L	40	(35)L	38	(38)L	L	L	L							
31									Q	L	L	(39)L	38 H	L	L	L	L							
Median									—	—	39	(38)	38	38	39	—	—							
Count										2	10	20	21	14	7	1								

04, 60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 63-46048

TABLE 90

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

NBS-D-3
Form adopted June 1946

IONOSPHERIC DATA

(M1500) E , ____ , January , 1955
(Characteristic) (Unit) (Month)

Observed at Washington, D.C.
Lat 38.7°N , Lang 77.1°W

75°W Mean Time

National Bureau of Standards
(Institution)

Scaled by: E.J.W., J.W.P., L.F.M., J.J.S.

Calculated by: E.J.W., J.W.P., L.F.M., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									S	4.1	4.1 F	4.2	4.3	4.3	4.4	4.4	(4.0) S							
2									S	4.4	4.3	4.4	4.4	4.4	4.5	4.4 H	(4.4) S							
3									S	4.3 H	4.3	4.4 H	(4.3) A	4.4	4.3	4.4	4.3 H							
4									4.3	4.2 H	4.2	4.3	4.4	4.4	4.4	4.4	(4.4) P							
5									S	A	A	4.3 H	4.3 H	4.4	4.3	4.4	4.4							
6									A	A	4.4 H	4.4 H	4.4	4.4	4.3 H	4.4	4.5							
7									S	A	A	A	4.3 H	4.2	4.3	4.4	(4.3) P							
8									S	A	A	(4.4) P	(4.4) P	(4.4) P	(4.3) P	4.4	4.2 H							
9									S	4.3 H	A	(4.4) P	4.5	4.4	4.5	A	4.4							
10									S	4.4 H	4.2	4.3	(4.3) P	4.4	4.4	4.2	4.4							
11									S	4.1 H	4.3 K	4.2 H	4.3 H	4.3 H	(4.3) H	(4.5) H	4.2							
12									A	4.3 H	4.3 H	4.2 H	A	4.2 H	4.4 H	4.3 H	A							
13									4.1	(4.3) P	4.3	4.3	4.3	4.4 H	4.3	4.4 H	4.4							
14									S	4.3	(4.3) A	(4.2) A	4.2 H	4.2	4.2	4.3	4.3							
15									S	4.1 H	4.2	(4.2) A	4.3	4.2	A	4.4	4.2							
16									S	A	4.4	4.4	4.4	4.4 H	4.4	4.4	4.4							
17									S	4.3	4.3	4.3 H	4.4 H	4.4	4.4	(4.4) P	S K							
18									S K	A K	A K	A K	4.3 H K	4.4 H K	4.4 H K	4.3 H K	(4.3) H							
19									4.4 H K	4.2 H K	(4.3) P K	4.4 F K	4.3 K	4.4 K	(4.3) F K	(4.3) F K	4.4 K							
20									S K	4.2 K	4.3 H K	4.4 H K	4.2 H K	4.2	4.3	4.3	4.3 H							
21									A	A	(4.4) P	A	5	4.2	4.2	4.2	4.3							
22									S	4.2 H	4.3	4.3	4.2	4.3	4.3	4.4 H	4.4 H							
23									A	A	B	4.3 H	4.2 H	4.2	4.3 H	4.3 H	4.4							
24									S	4.2	4.4	4.2	4.2	4.2	4.3	4.2	4.3							
25									S	4.1 H	4.3 H	4.3 H	4.3 H	A	4.3	4.3	4.4 H							
26									4.2	4.2 H	4.3 H	A	4.3 H	4.3	4.3	A	4.3 H							
27									4.2	4.2	4.3	4.2	4.2	4.3	4.4 H	4.4	4.4							
28									(4.4) S	4.4	4.2 H	4.3 H	4.2	4.3	4.3 H	A	4.2 H							
29									S	4.3 H	4.3	4.2 H	4.1	4.2 H	4.2 H	4.2	4.2							
30									4.3 H	4.4	4.3	4.3	4.3	4.3 H	4.2	4.3	4.2							
31									4.4	4.3 H	4.3 H	4.3 H	4.3 H	4.3	4.4 H	4.4 H	4.3 H							
Median									4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.3							
Count									8	23	25	27	29	30	30	28	29							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

04.60

GPO 83-460 49

Table 91

Ionospheric Storminess at Washington, D. C.

January 1955

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	1	2			2	1
2	1	2			2	1
3	1	1			1	2
4	2	1			3	2
5	3	2			1	2
6	1	2			2	2
7	1	2			2	2
8	1	1			1	1
9	2	3			3	3
10	1	1			1	1
11	1	1			2	3
12	0	0			2	1
13	1	1			4	3
14	1	1			2	1
15	1	2			0	0
16	3	1			2	2
17	1	4	1600	----	3	5
18	5	1	----	1500	5	3
19	7	6	0300	----	6	4
20	4	3	----	1200	3	2
21	3	2			3	2
22	2	2			2	1
23	1	3			2	2
24	3	2			1	1
25	1	2			1	1
26	1	1			1	0
27	1	1			1	3
28	0	2			3	1
29	1	3			1	2
30	1	1			2	2
31	1	1			1	1

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D. C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

----Dashes indicate continuing storm.

Table 92

Radio Propagation Quality Figures

(Including Comparisons with Short-Term and Advance Forecasts)

December 1954

Day	North Pacific 9-hourly quality figures			Short-term forecasts issued at			Whole day quality index	Advance forecasts (Jp reports) for whole day; issued in advance by:		
	03 to 12	09 to 18	18 to 03	02	09	18		1-4 days	4-7 days	8-25 days
1	6	6	6	6	5	7	6	6	6	
2	6	6	7	6	6	6	7	6	6	
3	6	6	6	6	5	7	6	6	6	
4	6	6	6	6	6	7	6	6	7	
5	6	6	7	6	6	7	7	7	7	
6	6	6	7	6	6	7	7	7	7	
7	6	6	7	6	6	6	6	7	7	
8	7	6	7	6	6	6	7	6	6	
9	6	6	6	6	6	6	6	6	6	
10	5	5	6	6	6	6	5	6	6	
11	6	5	7	6	6	7	6	6	6	
12	7	6	6	6	6	6	7	6	6	
13	6	6	7	6	6	7	6	7	6	
14	7	6	6	6	6	7	7	7	6	
15	6	6	6	6	5	7	6	7	6	
16	6	6	6	6	5	6	6	6	5	
17	5	5	6	6	5	5	5	5	5	
18	6	5	6	5	5	6	6	(4)	5	
19	6	6	6	6	6	6	6	5	6	
20	5	5	6	6	5	6	6	5	6	
21	6	5	7	6	6	6	6	6	6	
22	6	6	7	6	6	6	6	6	6	
23	7	6	7	6	6	7	7	6	6	
24	5	5	6	6	6	7	6	5	6	
25	6	6	7	6	5	6	6	6	5	
26	6	6	7	6	6	7	6	6	6	
27	6	5	6	6	6	6	6	6	6	
28	5	5	6	6	5	6	6	6	6	
29	6	6	7	6	6	7	6	6	7	
30	5	5	6	6	5	7	6	6	7	
31	5	6	7	6	5	7	6	6	7	
Score:										
Quiet Periods			P	19	20	17		19	17	
			S	12	11	14		11	14	
			U	0	0	0		0	0	
			F	0	0	0		1	0	
Disturbed Periods			P	0	0	0		0	0	
			S	0	0	0		0	0	
			U	0	0	0		0	0	
			F	0	0	0		0	0	

Scales:

Q-scale of Radio Propagation Quality

(1) - useless
(2) - very poor
(3) - poor
(4) - poor to fair
5 - fair
6 - fair to good
7 - good
8 - very good
9 - excellent

Scoring: (beginning October 1952)

P - Perfect: forecast quality equal to observed
S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were ≥ 5, or both ≤ 5
F - Failure: other times when forecast quality two or more grades different from observed

Symbols:

X - probable disturbed date

Note: All times are UT (Universal Time or GCT)

Table 9a

Radio Propagation Quality Figures

(Including Comparisons with Short-Term and Advance Forecasts)

December 1954

Day	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day quality index	Advance forecasts (J-reports) for whole day, issued in advance by:			Geomagnetic K_{Ch}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-4 days	4-7 days	8-25 days	Half Day (1)	Day (2)
1	6	6	6	6	5	5	7	5	6	6	5		2	1
2	6	6	7	6	5	5	6	6	6	6	6		2	2
3	5	6	7	6	6	6	7	7	6	7	7		2	1
4	6	6	7	7	6	6	7	7	6	7	7		1	1
5	6	6	7	6	6	5	7	7	6	7	7		1	1
6	6	6	7	6	6	6	7	7	6	7	7		2	1
7	6	6	7	6	6	6	7	6	6	7	7		3	2
8	6	6	7	6	5	6	7	7	6	7	7		2	1
9	6	7	7	6	6	6	7	7	6	6	7		2	1
10	6	5	7	6	6	5	7	7	6	6	6		2	1
11	6	6	7	7	6	6	7	7	6	6	6		0	1
12	7	6	7	7	6	6	7	6	7	7	7		2	2
13	7	6	7	6	6	6	7	6	7	7	7		2	1
14	6	6	6	6	6	6	7	6	6	6	7		1	1
15	6	6	7	6	6	6	7	7	6	6	7		0	0
16	6	6	7	7	6	6	7	6	6	6	6		0	0
17	6	6	6	6	6	6	6	6	6	(4)	6		3	3
18	5	5	6	6	6	(4)	6	6	6	(4)	6		3	2
19	6	5	7	6	5	5	7	6	6	5	6		2	2
20	6	6	6	6	5	6	7	6	6	6	6		3	3
21	6	6	7	6	5	6	7	6	6	6	6		1	2
22	6	6	6	6	6	6	7	6	6	6	6		2	0
23	6	6	7	7	6	6	7	7	6	6	6		2	1
24	6	6	7	7	6	6	7	7	7	6	6		1	1
25	7	6	7	7	6	6	7	7	7	6	6		1	1
26	6	6	7	7	6	6	7	7	7	6	6		1	1
27	6	6	7	7	6	6	7	6	7	6	6		3	3
28	6	6	7	7	5	5	6	6	7	5	6		2	2
29	6	6	7	7	6	6	7	7	7	5	7		2	1
30	6	6	7	6	6	6	7	7	6	6	7		2	1
31	6	6	6	7	6	6	7	7	6	6	6		1	1
Score:														
Quiet Periods					P	19	25	24	18		16	15		
					S	12	6	7	13		11	16		
					U	0	0	0	0		2	0		
					F	0	0	0	0		2	0		
Disturbed Periods					P	0	0	0	0		0	0		
					S	0	0	0	0		0	0		
					U	0	0	0	0		0	0		
					F	0	0	0	0		0	0		

Scales:

Q-scale of Radio Propagation Quality
- (1) - useless
- (2) - very poor
- (3) - poor
- (4) - poor to fair
- 5 - fair
- 6 - fair to good
- 7 - good
- 8 - very good
- 9 - excellent

K-scale of Geomagnetic Activity
0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geq 4$ indicates significant disturbance, enclosed in ( ) for emphasis

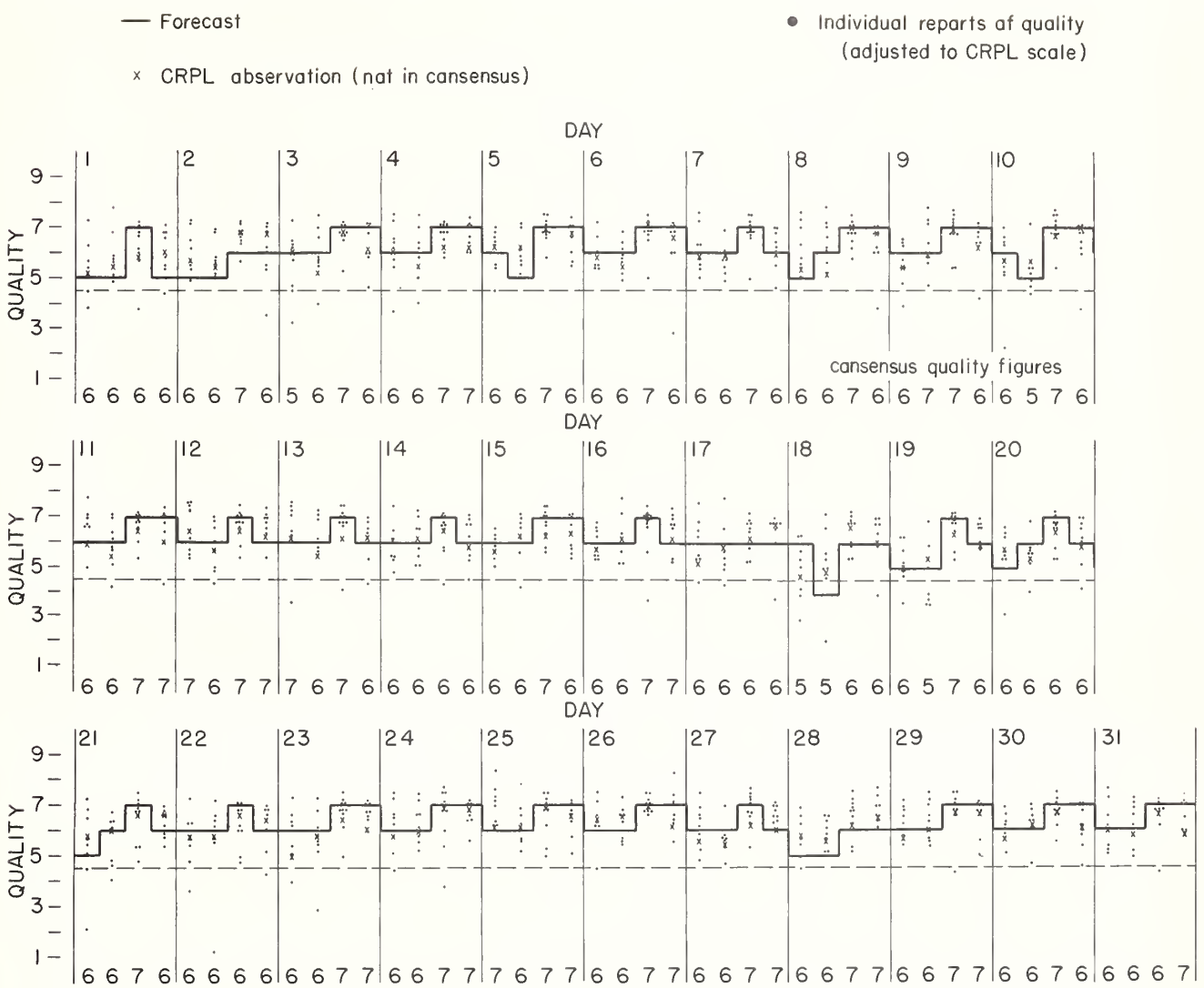
Scoring: (beginning October 1952)
- P - Perfect: forecast quality equal to observed
- S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
- U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were ≥ 5, or both ≤ 5
- F - Failure: other times when forecast quality two or more grades different from observed

Symbols:
- X - probable disturbed date

Note: All times are G.C.T. (Greenwich Civil Time = G.M.T.)

Table 93 b

Short-Term Forecasts — December 1954



Outcome of Advance Forecasts (1 to 4 Days Ahead) - December 1954

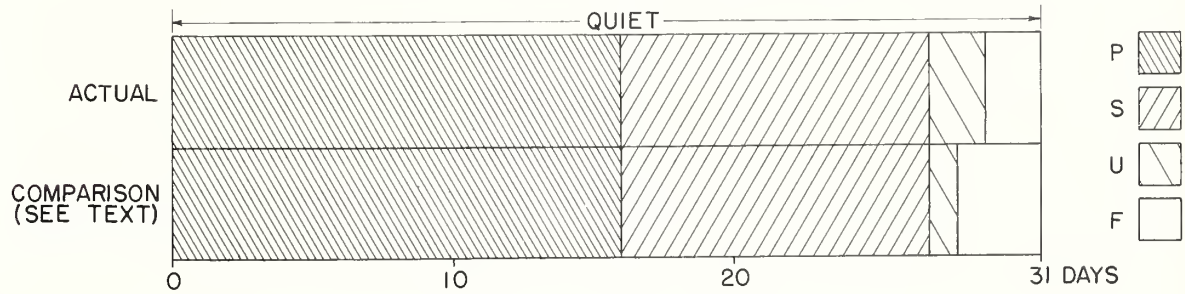


Table 94a

Coronal Observations at Climax, Colorado, (5303A), east limb

(Absolute values in millionths of the brightness in 1 angstrom at the center of the solar disk)

Date	Degrees north of the solar equator																				0°	Degrees south of the solar equator																		
UT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90				
1955																																									
Jan. 1.x																																									
2.x																																									
3.9a	-	-	-	-	-	1	3	1	1	1	2	2	1	2	1	-	-	-	-	-	-	-	-	-	-	1	1	3	3	1	1	-	-	-	-	-	-	-	-	-	-
4.x																																									
5.x																																									
6.7	-	-	-	-	-	1	3	1	1	3	16	16	33	5	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	1	2	2	1	1	11	16	14	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	1	3	8	4	4	26	23	6	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	1	13	11	11	4	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	5	3	7	3	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.x																																									
12.7	-	-	-	1	1	1	-	-	-	-	-	-	1	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.x																																									
14.9	-	-	-	-	-	-	-	-	-	-	3	3	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.8	-	-	-	-	-	-	-	-	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.x																																									
17.x																																									
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	3	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.x																																									
20.x																																									
21.x																																									
22.x																																									
23.x																																									
24.x																																									
25.x																																									
26.x																																									
27.x																																									
28.9	-	-	-	-	-	-	-	-	1	3	2	1	3	3	18	13	3	-	-	-	-	-	-	-	-	2	3	4	1	-	-	-	-	-	-	-	-	-	-	-	-
29.8	-	-	-	-	-	-	-	-	-	-	-	-	1	4	13	4	2	-	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
30.x																																									
31.x																																									

Table 95a

Coronal Observations at Climax, Colorado, (6374A), east limb

(Absolute values in millionths of the brightness in 1 angstrom at the center of the solar disk)

Date	Degrees north of the solar equator																				0°	Degrees south of the solar equator																		
UT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90				
1955																																									
Jan. 1.x																																									
2.x																																									
3.9a	1	1	1	1	-	-	-	-	-	1	2	2	1	4	2	4	4	4	4	5	5	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4.x																																									
5.x																																									
6.7	1	1	1	1	-	-	-	-	-	-	1	5	7	14	2	2	2	2	5	4	4	4	4	3	2	2	-	1	1	-	-	-	-	-	-	1	1				
7.7	1	1	1	1	1	1	-	-	-	-	-	2	-	-	-	1	2	2	2	3	5	4	3	2	1	1	-	-	1	1	1	1	1	1	1	1	1				
8.7	2	1	1	1	1	1	1	1	2	2	4	3	7	7	7	6	9	9	8	9	7	8	8	8	5	5	3	2	2	1	1	1	1	1	1	1	1				
9.7	2	1	1	1	1	1	1	1	1	2	1	2	2	4	2	3	3	3	3	3	4	3	3	4	2	2	2	2	1	1	1	1	1	1	1	2	2				
10.7	1	1	1	1	1	1	-	-	-	1	1	2	2	4	2	3	4	2	2	4	3	2	2	2	2	1	2	1	1	-	-	1	1	1	1	1	1				
11.x																																									
12.7	1	1	-	-	-	-	-	-	-	-	-	-	2	2	1	1	1	2	2	2	2	2	2	2	1	2	2	2	1	-	-	-	-	1	1	1	1	1				
13.x																																									
14.9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1				
15.8	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
16.x																																									
17.x																																									
18.7	1	1	1	1	-	-	-	-	-	1	1	1	1	2	2	2	2	2	2	2	2	2	2	11	9	10	1	2	1	-	-	-	-	1	-	1	1	1				
19.x																																									
20.x																																									
21.x																																									
22.x																																									
23.x																																									
24.x																																									
25.x																																									
26.x																																									
27.x																																									
28.9	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	2	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1				
29.8	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1	6	1	2	3	2	4	5	3	2	2	2	2	2	1	1	1	1	1	1	1	1	1				
30.x																																									
31.x																																									

Table 94b

Coronal Observations at Climax, Colorado, (5303A), west limb

(Absolute values in millionths of the brightness in 1 angstrom at the center of the solar disk)

Date UT	Degrees south of the solar equator																			0°	Degrees north of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1955																																						
Jan. 1.x																																						
2.x																																						
3.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.x																																						
5.x																																						
6.7	-	-	-	-	-	-	-	-	-	-	-	-	1	24	1	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	1	11	1	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7a	-	-	-	-	-	-	-	-	-	-	2	-	2	-	-	-	-	-		-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-		-	-	-	-	1	1	1	-	1	-	-	-	-	-	-	-	-	-	-
11.x																																						
12.7	-	-	-	-	-	-	-	-	-	-	-	4	15	6	-	-	-	-		-	-	1	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-
13.x																																						
14.9	-	-	-	-	-	-	-	-	-	3	3	31	4	-	-	-	-	-		-	-	-	5	6	3	3	1	1	3	1	1	1	-	-	-	-	-	-
15.8	-	-	-	-	-	-	-	3	3	2	4	15	3	-	-	-	-	-		-	1	2	17	6	9	2	2	2	3	2	2	2	1	1	-	-	-	-
16.x																																						
17.x																																						
* 18.7	-	-	-	-	-	-	1	1	-	2	1	-	-	-	-	-	-	-		-	-	-	-	-	2	14	26	5	3	4	3	3	-	1	1	-	-	-
19.x																																						
20.x																																						
21.x																																						
22.x																																						
23.x																																						
24.x																																						
25.x																																						
26.x																																						
27.x																																						
28.9	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	2	3	4	3	2	1	1	-	-	-	-	-	-	-	-
29.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	-
30.x																																						
31.x																																						

* Yellow line (5694A), intensity 1, N30°.

Table 95b

Coronal Observations at Climax, Colorado,(6374A), west limb

(Absolute values in millionths of the brightness in 1 angstrom at the center of the solar disk)

Date UT	Degrees south of the solar equator																			0°	Degrees north of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1955																																						
Jan. 1.x																																						
2.x																																						
3.9a	1	1	1	1	1	1	1	1	1	1	2	2	1	1	3	4	4	4		3	3	4	4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1
4.x																																						
5.x																																						
6.7	1	-	-	-	-	-	-	-	-	1	1	-	-	1	12	10	2	2		2	2	2	2	2	1	1	1	-	-	1	-	-	-	-	-	-	1	1
7.7	1	1	1	1	1	1	1	1	1	1	1	1	3	3	2	2	2	2		3	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1
8.7a	1	1	1	1	1	1	1	1	1	1	2	2	2	3	4	3	3	2		3	3	3	2	3	3	2	2	2	1	1	1	1	1	1	1	1	2	2
9.7	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2		2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2
10.7	1	1	1	1	1	-	-	-	-	-	1	1	1	1	2	2	2	2		2	2	2	2	2	2	1	1	1	1	1	1	1	-	1	1	1	1	1
11.x																																						
12.7	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2		2	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
13.x																																						
14.9	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2		2	2	2	5	14	4	2	1	1	1	1	1	1	1	1	1	1	1	1
15.8	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	3	4		4	4	2	15	16	3	3	2	2	2	1	1	1	1	1	1	1	1	1
16.x																																						
17.x																																						
18.7	1	1	1	-	-	-	-	-	-	-	-	1	2	2	2	2	2	2		2	2	2	2	1	-	8	8	4	1	1	-	-	-	-	-	-	1	1
19.x																																						
20.x																																						
21.x																																						
22.x																																						
23.x																																						
24.x																																						
25.x																																						
26.x																																						
27.x																																						
28.9	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	2	2	2		3	3	3	2	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1
29.8	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	3	2		2	2	2	2	2	3	3	2	1	1	1	1	1	1	1	1	1	1	1
30.x																																						
31.x																																						

Table 96a

Coronal Observations at Climax, Colorado, (6702A), east limb

(Absolute values in millionths of the brightness in 1 angstrom at the center of the solar disk)

Date	Degrees north of the solar equator																			0°	Degrees south of the solar equator																		
UT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1955																																							
Jan. 1.x																																							
2.x																																							
3.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.x																																							
5.x																																							
6.7	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	1	2	2	1	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.x																																							
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.x																																							
14.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.x																																							
17.x																																							
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.x																																							
20.x																																							
21.x																																							
22.x																																							
23.x																																							
24.x																																							
25.x																																							
26.x																																							
27.x																																							
28.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.x																																							
31.x																																							

Table 97a

Coronal observations at Sacramento Peak, New Mexico, (5303A), east limb

(Arbitrary Scale)

Date	Degrees north of the solar equator																			0°	Degrees south of the solar equator																		
UT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1955																																							
Jan. 1.7	-	-	-	2	2	3	4	5	6	7	7	4	3	4	2	2	-	2		3	3	2	3	5	8	12	13	11	5	5	4	3	2	-	-	-	-	-
2.x																																							
3.x																																							
4.x																																							
5.8	-	-	-	-	-	6	8	7	7	11	14	20	28	44	13	3	-	-		-	-	-	-	-	2	3	3	4	5	4	4	3	2	3	2	-	-	-
* 6.7	-	-	-	-	-	4	11	10	8	11	23	30	40	39	8	4	3	2		-	-	-	-	-	-	2	3	4	5	4	4	2	3	3	2	-	-	-
7.7	-	-	-	-	-	3	8	7	6	9	20	22	23	8	5	3	2	-		-	-	-	-	-	-	2	3	3	3	3	3	2	2	3	-	-	-	-
8.x																																							
9.x																																							
10.7	-	-	-	-	2	8	11	12	11	10	7	5	6	7	3	2	2	-		2	3	2	-	-	3	3	2	3	2	2	3	4	3	2	2	-	-	-
11.x																																							
12.x																																							
13.x																																							
14.x																																							
15.x																																							
16.7a	-	-	-	-	-	-	-	2	3	3	4	5	3	3	3	2	-	-		-	-	-	2	3	3	2	3	3	4	5	-	-	2	2	-	-	-	-
17.x																																							
18.8	-	-	-	-	-	2	2	2	2	3	3	3	2	5	4	3	2	2		-	-	2	3	4	23	28	16	6	5	5	4	3	2	-	-	-	-	-
19.9	-	-	-	-	-	-	-	-	2	3	3	3	4	5	5	4	3	2		-	2	2	3	5	20	23	19	10	5	3	2	-	-	-	-	-	-	-
20.x																																							
21.9a	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-
22.9	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X		X	X	X	X	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-
23.7	-	-	-	-	-	-	-	-	-	2	3	3	3	3	2	-	2	2		3	3	2	2	3	4	5	6	5	5	4	3	2	2	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	2	2	3	4	4	5	4	3	3	4		2	2	3	3	5	16	28	13	16	14	13	7	3	2	-	-	-	-	-
25.x																																							
26.x																																							
27.7	-	-	-	-	-	-	2	2	2	3	4	5	5	5	5	8	4	3		-	-	-	2	7	8	12	23	28	16	13	4	5	3	2	-	-	-	-
28.7	-	-	-	-	-	-	2	3	3	4	5	4	5	8	14	30	17	8		3	-	-	2	3	3	5	8	16	15	14	6	4	3	2	-	-	-	-
29.7	-	-	-	-	-	2	3	4	5	8	7	8	9	12	28	36	18	3		2	-	-	-	2	3	5	8	13	14	14	8	5	4	3	2	-	-	-
30.x																																							
31.7	-	-	-	-	2	2	3	5	7	5	4	5	7	8	15	12	4	3		2	-	-	-	2	3	2	3	4	6	8	7	6	4	3	-	-	-	-

* Yellow line (5694A), intensity 3, N27° - N32°.

Table 96b

Coronal Observations at Climax, Colorado, (6702A), west limb

(Absolute values in millionths of the brightness in 1 angstrom at the center of the solar disk)

Date UT	Degrees south of the solar equator																			0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1955																																						
Jan. 1.x																																						
2.x																																						
3.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.x																																						
5.x																																						
6.7	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.x																																						
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.x																																						
14.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.x																																						
17.x																																						
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-
19.x																																						
20.x																																						
21.x																																						
22.x																																						
23.x																																						
24.x																																						
25.x																																						
26.x																																						
27.x																																						
28.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.x																																						
31.x																																						

Table 97b

Coronal observations at Sacramento Peak, New Mexico, (5303A), west limb

(Arbitrary Scale)

Date UT	Degrees south of the solar equator																			0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1955																																						
Jan. 1.7	-	-	-	-	-	-	2	3	3	2	2	2	3	3	2	2	2	-	2		3	2	3	3	4	5	4	5	4	4	3	2	-	-	-	-	-	-
2.x																																						
3.x																																						
4.x																																						
5.8	-	-	-	-	-	-	-	2	3	3	3	3	5	11	36	20	5	3	4		4	3	4	3	2	2	2	3	3	4	3	2	3	2	-	-	-	-
6.7	-	-	-	-	-	-	2	3	2	2	3	5	8	14	44	14	5	3	2		-	-	-	2	3	3	3	4	4	4	3	2	3	2	-	-	-	-
7.7	-	-	-	-	-	-	-	-	2	2	2	3	4	15	22	11	4	3	2		2	2	3	3	3	2	3	3	5	4	3	2	2	-	-	-	-	-
8.x																																						
9.x																																						
10.7	-	-	-	-	-	2	3	2	3	2	3	4	5	8	4	3	3	3	2		2	-	-	3	4	3	5	6	8	4	3	3	3	2	-	-	-	-
11.x																																						
12.x																																						
13.x																																						
14.x																																						
15.x																																						
16.7	-	-	-	-	-	-	2	2	3	5	5	8	7	4	3	2	-	-	-		2	3	4	5	8	11	5	3	2	3	4	5	4	5	4	3	3	-
17.x																																						
18.8	-	-	-	-	-	-	2	2	3	4	5	6	5	4	2	-	-	-	-		2	3	3	3	4	16	39	38	28	23	20	17	10	6	5	4	3	-
* 19.9	-	-	-	-	-	-	2	3	4	4	5	4	3	2	2	2	2	-	-		-	-	-	2	3	16	32	47	20	28	23	16	14	9	7	4	2	-
20.x																																						
21.9a	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	2	2	-	-
22.9	-	-	-	-	2	2	2	2	2	3	3	4	4	3	2	2	3	3	2		2	3	2	2	-	-	3	5	11	14	11	7	6	6	4	-	-	-
23.7	-	-	-	-	2	3	3	3	3	4	4	4	3	2	2	2	2	2	-		-	-	-	2	2	2	3	5	10	11	10	8	11	11	5	2	-	-
24.7	-	-	-	-	-	2	3	3	4	3	3	2	3	2	2	2	-	-	-		2	2	2	2	2	3	5	8	7	8	7	8	14	11	3	2	-	-
25.x																																						
26.x																																						
27.7	-	-	-	-	-	-	-	2	2	3	2	2	-	-	-	-	-	-	-		-	2	3	2	4	8	14	23	14	12	5	3	2	3	3	2	-	-
28.7	-	-	-	-	-	-	-	2	3	2	3	3	2	-	-	-	-	-	-		-	2	3	3	4	5	11	16	11	9	7	4	3	3	2	-	-	-
29.7	-	-	-	-	-	-	-	2	2	3	4	3	3	3	4	4	3	4	3		-	2	2	3	4	6	11	15	14	10	8	7	4	3	2	-	-	-
30.x																																						
31.7	-	-	-	-	-	-	-	2	2	3	2	3	4	5	8	11	7	5	-		-	-	-	2	3	16	41	44	8	5	5	4	3	2	-	-	-	-

* Yellow line (5694A), intensity 2, N40°.

Table 98a

Coronal observations at Sacramento Peak, New Mexico, (6374A), east limb
(Arbitrary Scale)

Date UT	Degrees north of the solar equator																		0°	Degrees south of the solar equator																
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1955																																					
Jan. 1.7	4	5	4	3	3	4	4	2	3	4	5	9	11	12	14	15	16	15	16	17	16	14	11	8	5	6	4	2	2	3	4	3	5	4	3	3	4
2.x																																					
3.x																																					
4.x																																					
5.8	3	4	3	4	4	4	2	2	3	3	5	14	16	36	28	8	11	14	16	16	18	16	15	13	11	6	4	3	2	2	3	3	3	2	3	3	2
6.7	4	4	5	3	4	2	3	3	2	2	5	11	23	32	8	11	12	13	14	20	16	17	18	16	11	8	4	3	5	5	4	3	2	3	4	4	3
7.7	4	4	5	3	4	3	3	3	2	3	4	11	8	14	8	10	11	14	14	15	18	20	17	16	15	14	8	5	5	4	4	3	4	3	4	5	4
8.x																																					
9.x																																					
10.7	4	3	4	2	5	3	4	5	3	4	5	11	13	14	16	14	13	12	13	13	14	16	18	16	15	14	11	11	10	5	4	3	2	3	4	3	3
11.x																																					
12.x																																					
13.x																																					
14.x																																					
15.x																																					
16.7a	3	4	5	4	5	3	3	3	2	3	4	8	6	7	8	14	13	11	10	11	13	14	15	13	12	11	8	7	4	3	2	2	3	4	3	2	3
17.x																																					
18.8	3	4	5	4	5	4	4	3	4	4	5	7	8	11	12	13	11	10	9	8	9	10	11	14	28	14	8	7	7	5	3	3	3	3	3	4	3
19.9	4	4	3	4	5	5	4	3	3	4	5	5	6	8	11	14	13	12	13	13	14	11	12	14	28	6	4	5	4	3	2	3	3	3	4	3	4
20.x																																					
21.9a	2	3	3	3	3	2	3	3	4	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	3	3	2	3	2
22.9	3	3	3	2	3	3	2	2	3	4	X	X	X	X	X	X	X	X	X	X	X	X	4	4	4	2	3	2	2	3	-	-	3	3	3	3	2
23.7	4	4	4	3	4	3	2	-	2	-	3	3	4	5	4	5	7	8	7	7	6	5	5	6	6	7	6	6	6	4	3	3	2	2	3	3	2
24.7	3	4	4	5	4	3	2	2	2	3	3	5	6	5	5	7	8	7	7	8	10	9	11	13	28	10	7	5	4	3	2	3	3	2	4	4	3
25.x																																					
26.x																																					
27.7	4	2	3	5	4	3	3	3	3	5	6	3	5	8	7	7	8	7	9	12	13	14	13	12	14	5	3	3	4	3	3	2	2	3	4	4	3
28.7	4	3	5	4	4	3	4	4	5	5	3	5	6	8	20	18	16	8	12	13	14	15	16	13	12	11	8	5	4	4	3	3	2	3	3	3	3
29.7	5	4	5	5	4	4	4	3	5	5	4	9	10	8	28	11	14	14	15	16	17	19	20	18	16	14	15	10	7	5	3	3	3	4	4	4	5
30.x																																					
31.7	4	4	3	4	3	3	3	4	4	4	5	8	11	10	9	8	11	13	13	14	14	15	16	13	11	10	9	8	3	2	3	5	4	3	2	2	3

Table 99a

Coronal observations at Sacramento Peak, New Mexico, (6702A), east limb
(Arbitrary Scale)

Date UT	Degrees north of the solar equator																		0°	Degrees south of the solar equator																
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1955																																					
Jan. 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.x																																					
3.x																																					
4.x																																					
5.8	-	-	-	-	-	-	-	-	-	-	2	3	4	6	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	2	3	3	4	5	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	2	2	3	4	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.x																																					
9.x																																					
10.7	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.x																																					
12.x																																					
13.x																																					
14.x																																					
15.x																																					
16.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.x																																					
18.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	-	-	-	-	-	-	-	-	-	-
19.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	2	-	-	-	-	-	-	-	-	-	-	-
20.x																																					
21.9a	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
22.9	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-
25.x																																					
26.x																																					
27.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.x																																					
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 98b

Coronal observations at Sacramento Peak, New Mexico, (6374A), west limb
(Arbitrary Scale)

Date UT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1955																																					
Jan. 1.7	4	4	5	3	2	3	4	3	4	5	8	13	11	12	13	12	13	14	15	16	16	14	11	10	8	7	9	5	4	3	2	3	3	3	3	4	4
2.x																																					
3.x																																					
4.x																																					
5.8	2	3	4	3	5	3	3	2	3	4	4	5	5	4	32	30	11	10	8	7	8	11	12	8	6	5	6	5	4	4	4	3	2	2	3	4	3
6.7	3	3	4	5	5	3	3	4	3	4	5	6	5	5	28	23	16	14	13	13	14	15	14	8	9	8	7	5	4	3	3	3	3	2	3	4	4
7.7	4	4	5	6	7	5	4	4	4	5	6	8	7	11	12	11	12	12	11	13	14	15	14	13	14	11	6	4	4	3	4	3	2	3	3	3	4
8.x																																					
9.x																																					
10.7	3	4	4	4	4	4	4	3	4	5	5	7	8	10	11	12	7	7	8	9	10	13	14	13	11	5	3	4	5	5	3	3	2	3	2	3	4
11.x																																					
12.x																																					
13.x																																					
14.x																																					
15.x																																					
16.7	3	2	2	3	3	3	2	2	3	2	3	2	4	5	6	8	11	10	10	11	12	14	16	13	8	6	5	3	4	2	2	3	4	3	2	2	3
17.x																																					
18.8	3	4	3	4	4	3	2	2	3	3	3	3	4	8	9	11	12	14	13	11	12	14	13	12	5	23	16	12	5	5	4	4	3	3	3	3	3
19.9	4	4	3	3	3	2	3	2	2	3	4	3	4	5	8	14	15	16	16	17	18	16	14	12	7	20	13	11	4	5	2	2	3	3	2	4	4
20.x																																					
21.9a	2	-	-	-	2	-	3	3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	3	2	3	2
22.9	2	2	2	2	3	2	3	2	2	3	2	3	5	5	7	11	12	12	13	11	11	10	8	6	5	6	5	3	4	4	2	2	2	2	3	2	3
23.7	2	2	3	3	4	2	2	-	2	3	3	4	5	7	7	12	12	11	11	9	8	10	11	8	7	10	7	5	4	4	3	4	3	2	2	3	4
24.7	3	3	3	3	3	2	2	3	3	3	4	5	7	7	8	14	13	12	12	11	11	11	11	10	8	11	10	7	4	5	4	3	3	2	3	4	3
25.x																																					
26.x																																					
27.7	3	2	3	4	4	2	3	3	4	4	4	5	8	8	9	11	12	11	11	11	12	11	10	9	7	8	6	4	3	3	4	3	4	4	3	3	4
28.7	3	3	4	4	3	2	3	3	4	5	7	8	14	15	14	14	15	16	16	14	16	15	14	13	11	8	9	8	4	4	4	3	3	3	3	3	4
29.7	5	4	5	3	3	2	2	4	5	4	4	8	14	15	15	15	16	17	18	19	18	17	16	15	14	20	17	11	6	5	4	3	4	5	4	4	5
30.x																																					
31.7	3	3	3	3	3	2	2	3	4	5	6	8	8	9	14	20	11	12	13	14	13	12	13	20	25	26	12	10	8	6	3	4	5	4	5	4	4

Table 99b

Coronal observations at Sacramento Peak, New Mexico, (6702A), west limb
(Arbitrary Scale)

Date UT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1955																																					
Jan. 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.x																																					
3.x																																					
4.x																																					
5.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.x																																					
9.x																																					
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.x																																					
12.x																																					
13.x																																					
14.x																																					
15.x																																					
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.x																																					
18.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5	4	2	2	2	-	-	-	-	-	-	-
19.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	6	4	3	2	-	-	-	-	-	-	-
20.x																																					
21.9a	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-
22.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-	-	-
23.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.x																																					
26.x																																					
27.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.x																																					
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	5	4	2	-	-	-	-	-	-	-	-

Table 100

Zürich Provisional Relative Sunspot Numbers

January 1955

Date	R_Z*	Date	R_Z*
1	22	17	15
2	17	18	10
3	11	19	9
4	19	20	7
5	32	21	8
6	22	22	8
7	23	23	8
8	29	24	19
9	31	25	21
10	36	26	25
11	33	27	25
12	31	28	19
13	28	29	16
14	27	30	12
15	18	31	22
16	16	Mean:	20.0

* Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

Table 101

American Relative Sunspot Numbers

December 1954

Date	R_A'	Date	R_A'
1	0	17	19
2	0	18	26
3	1	19	19
4	3	20	16
5	1	21	5
6	0	22	5
7	3	23	14
8	0	24	12
9	0	25	8
10	0	26	5
11	1	27	0
12	0	28	5
13	0	29	14
14	3	30	21
15	18	31	22
16	17	Mean:	7.7

Table 102

Solar Flares, January 1955

Observatory	Date 1955	Time Observed Beginning (GCT)	Time Observed Ending (GCT)	Duration (Min)	Area (Mill) (of) (Visible) (Hemisph)	Position Latitude (Deg)	Position Longitude Diff (Deg)	Time of Maximum (GCT)	Int. of Maximum	Relative Area of Maximum (Tenths)	Importance	SID Observed
Wendel.	Jan. 5	0930B	0945A	>15	97	N21	E41	-	-	-	(1)	
Wendel.	Jan. 5	1014	1021	7	48	N21	E41	1019	-		(1)	
S. Peak	Jan. 6	1725	1825	60	160	N18	E30	1749	15	0.1	(2)	yes
S. Peak	Jan. 7	1510	1520	10	40	N35	E70	1515	10	0.8	(1-)	
S. Peak	Jan. 7	1530	1600	30	30	N30	E65	1541	8	0.9	(1-)	
S. Peak	Jan. 10	2105	2135	30	40	N32	E22	2120	8	0.8	(1-)	
S. Peak	Jan. 16	2130B	2220	>50	780	N33	W41	2130B	13	0.2	(3)	
S. Peak	Jan. 30	1740	1807	27	65	S24	E19	1749	10	0.5	(1-)	
S. Peak	Jan. 30	2230B	2240A	>10	30	S24	E19	2231	7	0.9	(1-)	

Wendel. = Wendelstein.
S. Peak = Sacramento Peak.

( ) Importance rating deduced by CRPL from the reported observations.

B Flare began before given time.
A Flare ended after given time.
Q Time reported as questionable.

Table 103

Indices of Geomagnetic Activity for December 1954

Preliminary values of international character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Daily "equivalent amplitude", Ap;
Magnetically selected quiet and disturbed days

Gr. Day 1954	C	Values Kp Three-hour interval 1	2	3	4	5	6	7	8	Sum	Ap	Final Selected Days
1	0.3	3-	3-	2o	1-	0+	1+	1+	1+	12+	6	Five
2	0.3	2o	1+	1+	2-	2o	2-	1o	2+	13+	6	Quiet
3	0.2	3-	1-	2-	1+	0+	1-	1+	1+	10o	5	
4	0.3	0o	0o	1o	2+	2-	1-	2o	1-	8+	4	10
5	0.4	1+	1o	1-	1-	1-	2+	2o	1+	10o	5	11
												14
6	0.2	2-	1+	1+	2-	1-	1-	1+	1+	10o	5	15
7	0.8	3-	2+	3o	1o	2-	2o	2+	3o	18o	10	16
8	0.0	2o	2+	1o	1-	1o	0+	0+	1+	9o	4	
9	0.4	2o	2o	2o	2o	2-	0+	1o	1o	12o	6	
10	0.0	0+	1-	1+	1+	1-	0+	1o	1-	6+	3	
11	0.0	1-	0o	0+	0+	1-	1-	0+	0o	3o	2	Five
12	0.6	0+	2-	2+	1+	1+	2+	3-	3o	15o	8	Disturbed
13	0.5	3o	2o	1-	1o	1-	1-	2+	2o	12+	6	
14	0.0	2o	1o	0+	0+	0+	1-	0+	0+	5+	3	7
15	0.0	1-	0o	0o	1-	0o	0o	0o	0+	2-	1	17
												18
16	0.0	0o	1o	0+	1-	0+	0+	0+	0o	3o	2	20
17	1.1	1+	2+	4+	4o	4-	3+	2o	2+	23+	16	27
18	0.9	5-	4+	2-	3-	2o	2-	1+	3+	22-	16	
19	0.6	2o	2-	1+	2-	3o	3-	2-	2o	16o	8	
20	1.0	2-	3-	2+	3-	3o	2o	2o	4-	20o	11	
21	0.4	2+	1-	1-	2-	2o	1+	1+	2-	12-	6	Ten
22	0.2	3-	1o	1o	1+	0+	1-	1+	0+	9-	5	Quiet
23	0.1	1o	2-	1o	2-	1o	1+	1o	1-	9+	3	
24	0.0	1-	1o	1o	1-	2-	0+	1o	1-	7o	4	4
25	0.3	1+	0o	1+	1o	2o	2o	2o	1+	11o	5	6
												10
26	0.3	1o	1o	0+	1o	1+	1o	1+	2-	9-	4	11
27	1.2	4+	2+	1+	3-	5o	2+	2-	3o	23-	17	14
28	0.5	3o	3+	1-	2+	1+	2+	2o	2-	17-	9	15
29	0.3	1o	2-	1+	2o	2+	2-	1+	1+	13-	6	16
30	0.4	1-	1+	2-	2+	2-	1-	1-	2+	11+	6	22
31	0.2	2-	2-	0+	2o	2-	1+	1o	1-	10+	5	23
Mean:	0.37									Mean:	6	24

Table 104

Sudden Ionosphere Disturbances Observed at Washington, D. C.

January 1955

1955 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
Jan. 6	1742	1820	Ohio, Mexico, North Dakota, England	0.1	Solar flare** 1725 Solar out-burst*** 1745

*Ratio of received field intensity during SID to average field intensity before and after, for station KQ2XAU (formerly W8XAL), 6080 kilocycles, 600 kilometers distant.

**Time of observation at Sacramento Peak, New Mexico.

***As observed at Boulder, Colorado, on both 460 megacycles and 167 megacycles.

Table 105

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief, Cable and Wireless, Ltd., as Observed in England

1955 Day	GCT Beginning	GCT End	Receiving station	Location of transmitters
Jan. 10	1220	1315	Brentwood	Barbados, Chile, Eritrea, New York
10	1230	1430	Somerton	Argentina

Note: Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Boulder, Colorado; Attention: Mr. Vaughn Agy.

GRAPHS OF IONOSPHERIC DATA

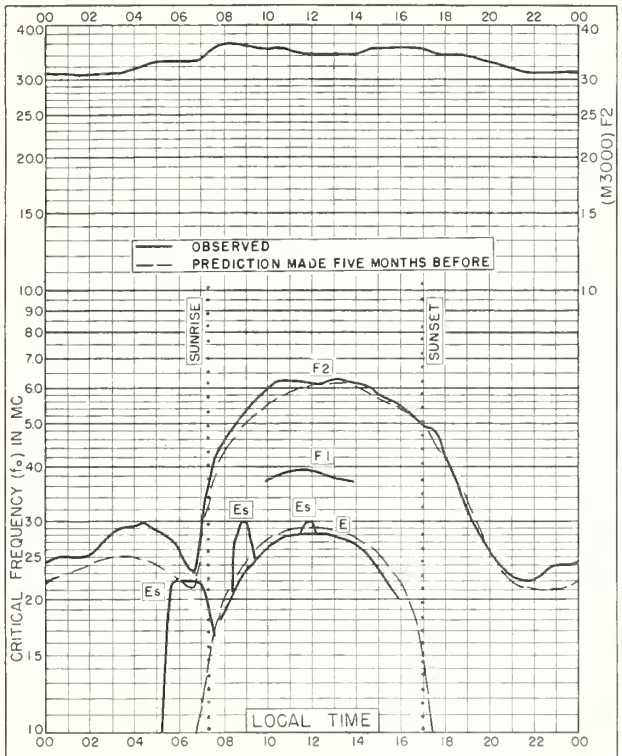


Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W JANUARY 1955

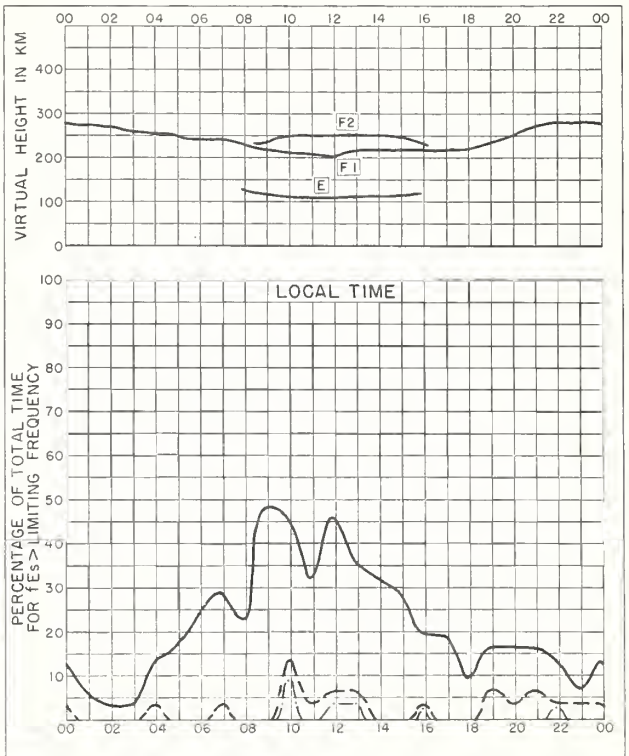


Fig. 2. WASHINGTON, D. C. JANUARY 1955

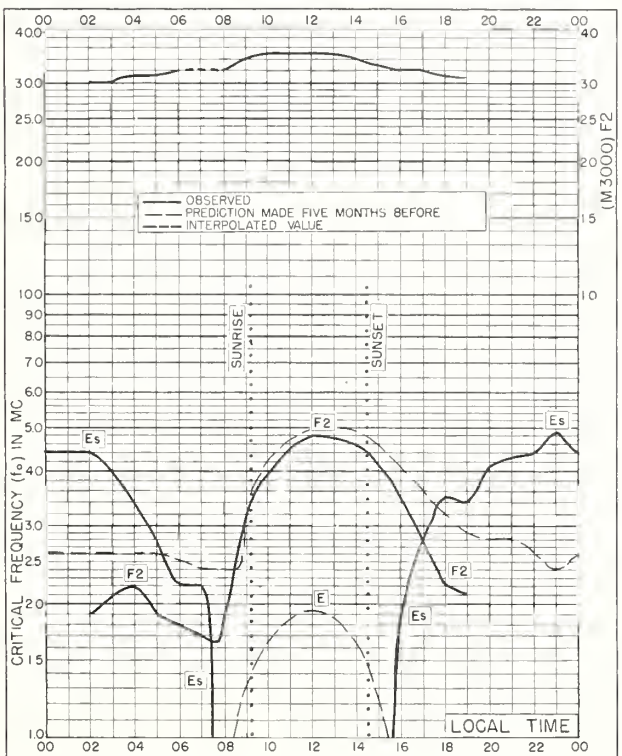
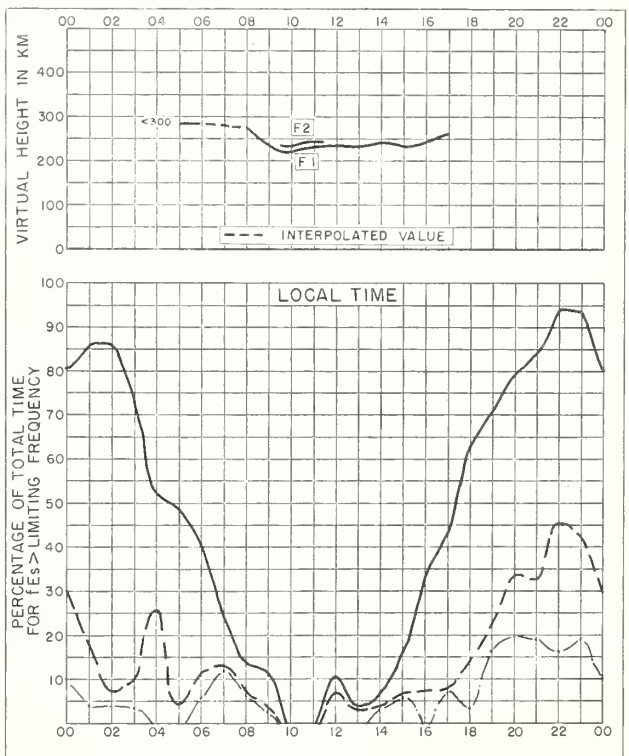


Fig. 3. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W DECEMBER 1954



DECEMBER 1954

Fig. 4. NARSARSSUAK, GREENLAND

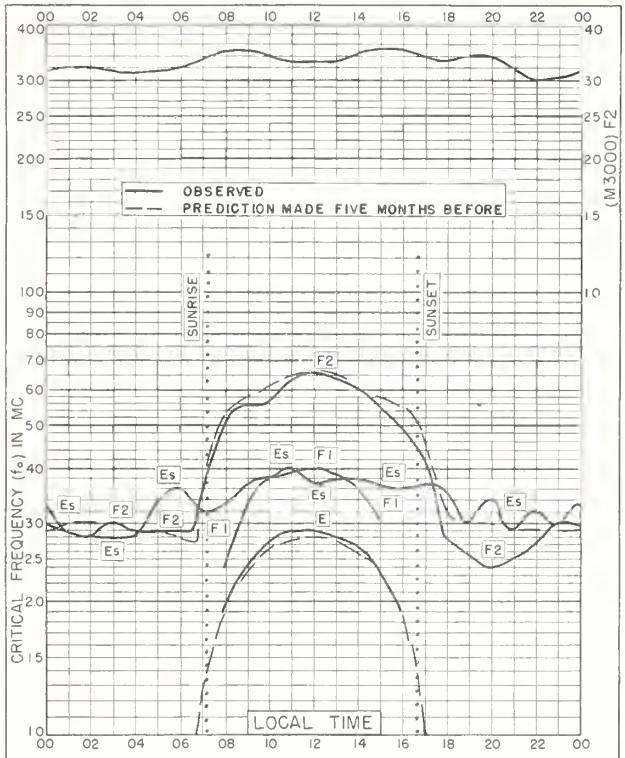


Fig. 5. SAN FRANCISCO, CALIFORNIA
37.4° N, 122.2° W DECEMBER 1954

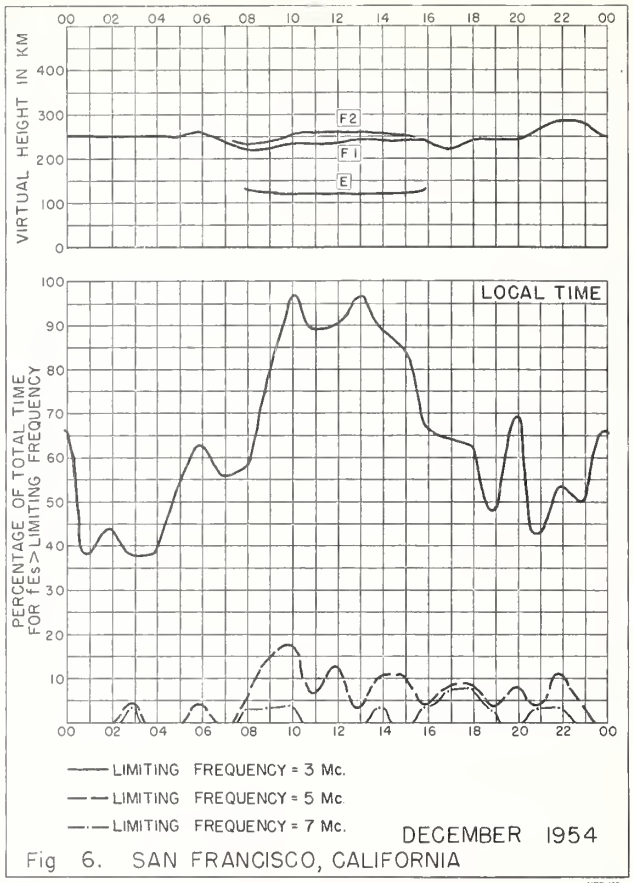


Fig 6. SAN FRANCISCO, CALIFORNIA DECEMBER 1954

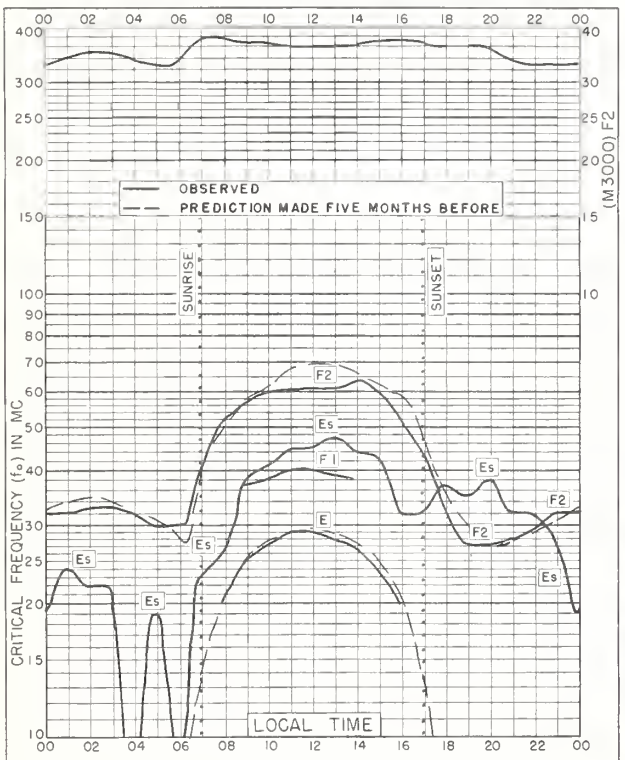


Fig. 7. WHITE SANDS, NEW MEXICO
32 3°N, 106 5°W DECEMBER 1954

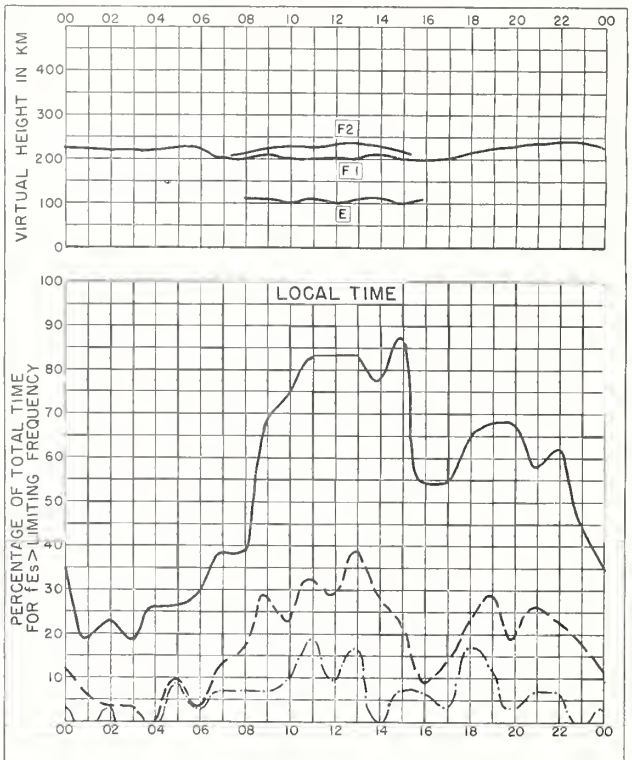


Fig. 8. WHITE SANDS, NEW MEXICO DECEMBER 1954

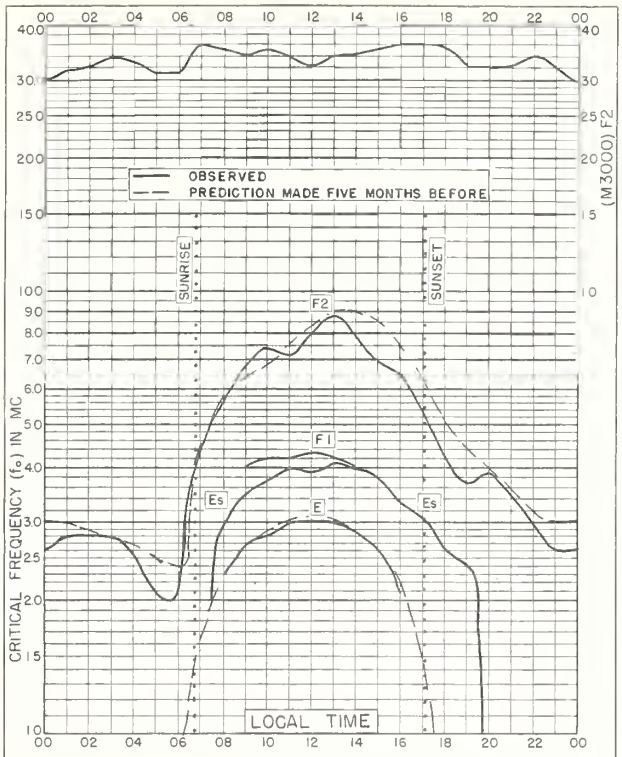


Fig. 9. OKINAWA I.
26.3°N, 127.8°E DECEMBER 1954

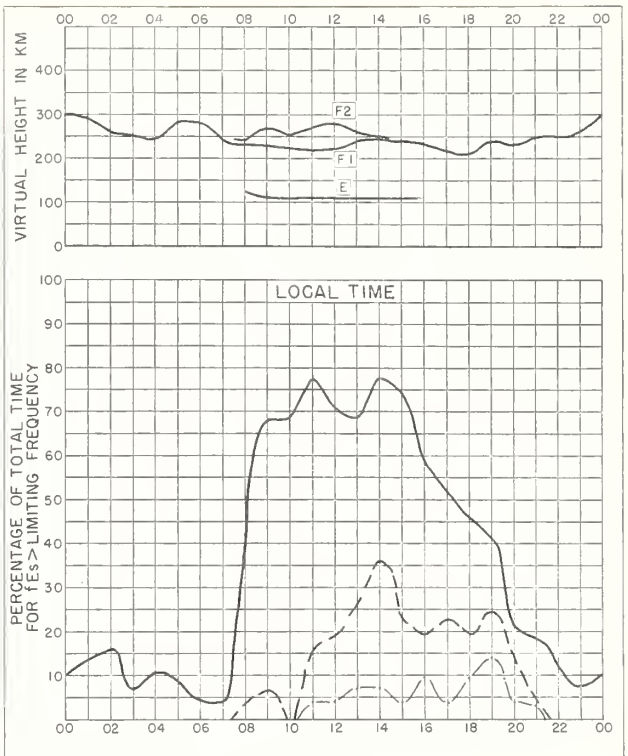


Fig. 10. OKINAWA I. DECEMBER 1954

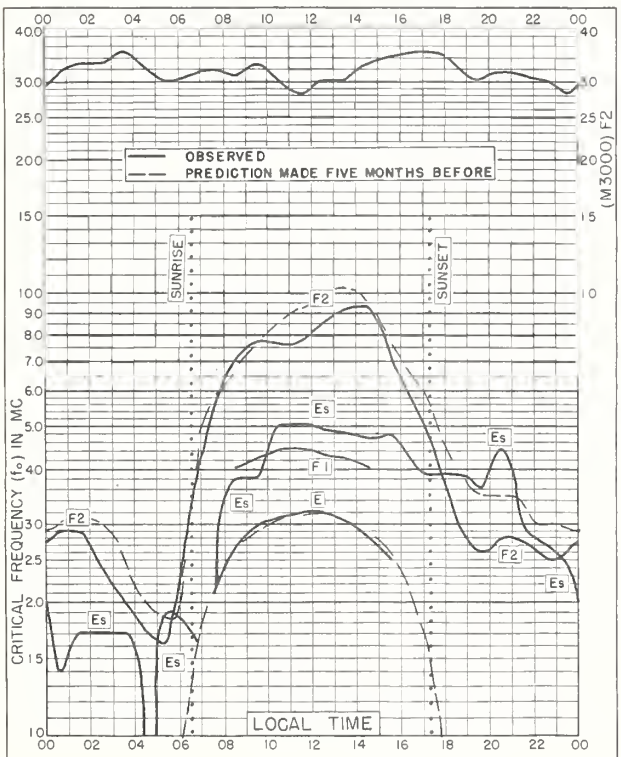


Fig. 11. MAUI, HAWAII
20.8°N, 156.5°W DECEMBER 1954

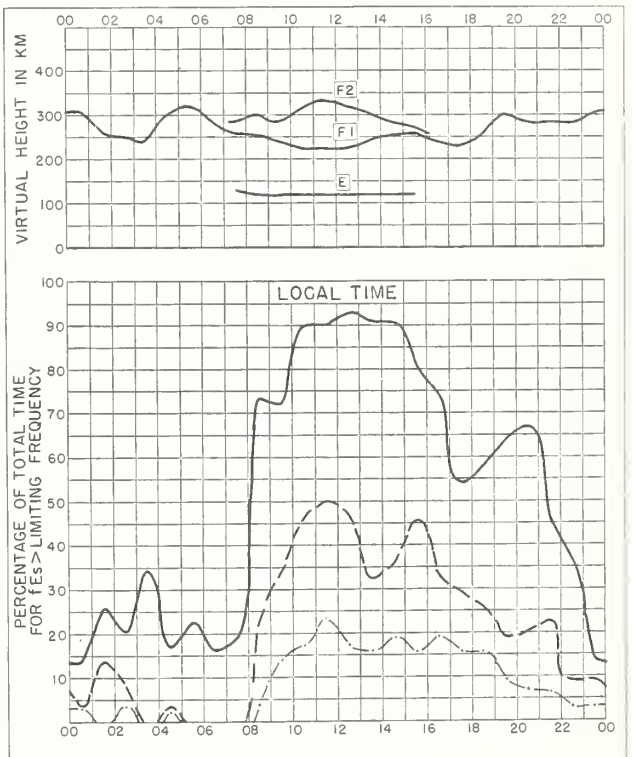


Fig. 12. MAUI, HAWAII DECEMBER 1954

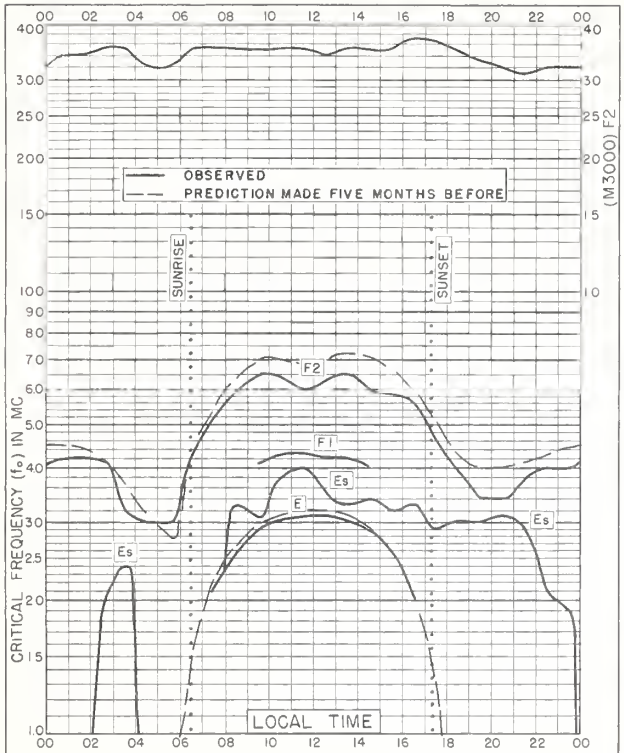


Fig. 13. PUERTO RICO, W. I.
18.5°N, 67.2°W DECEMBER 1954

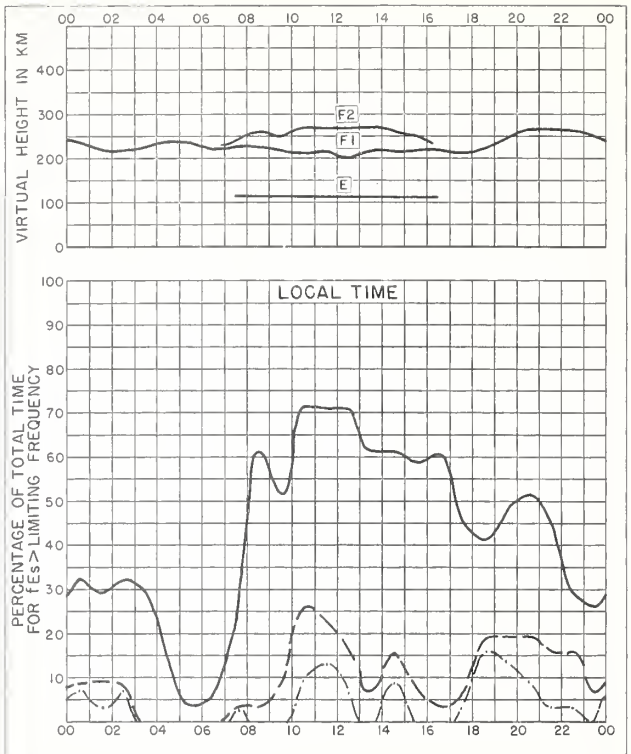


Fig. 14. PUERTO RICO, W. I. DECEMBER 1954

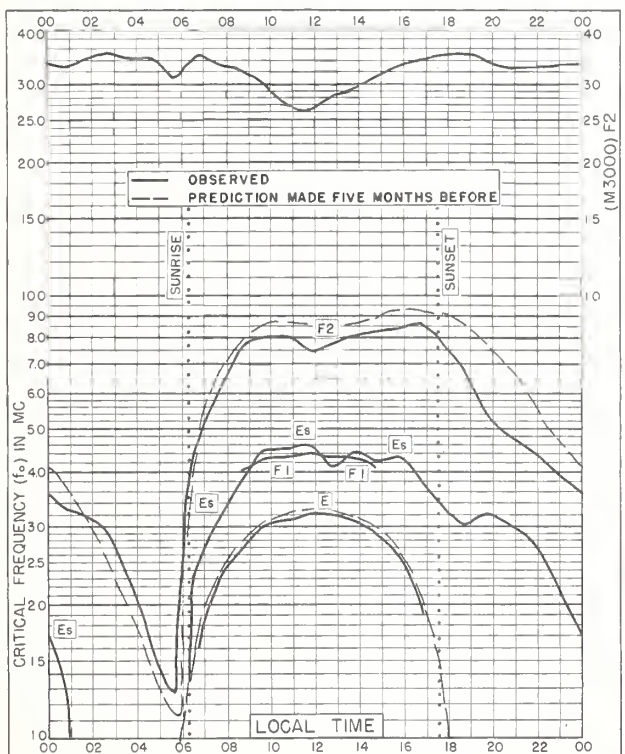


Fig. 15. GUAM I.
13.6°N, 144.9°E DECEMBER 1954

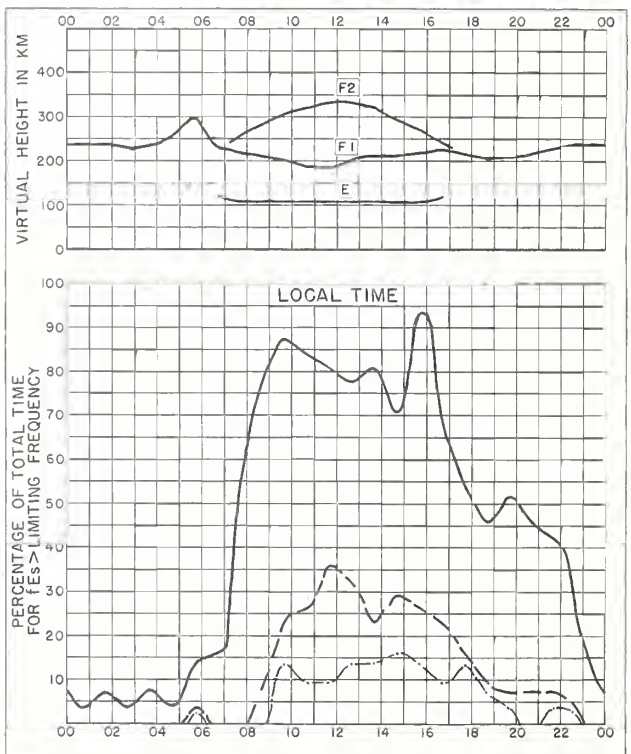


Fig. 16. GUAM I. DECEMBER 1954

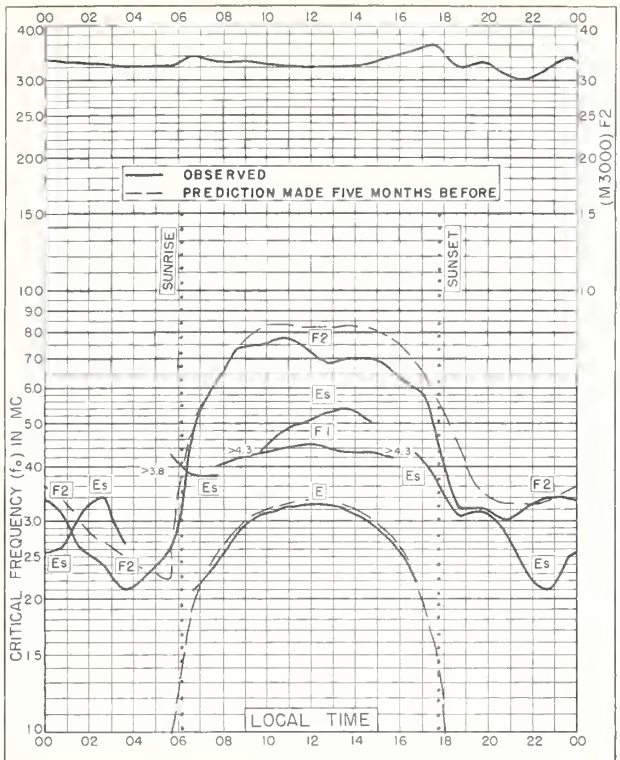


Fig 17. PANAMA CANAL ZONE
9.4°N, 79.9°W DECEMBER 1954

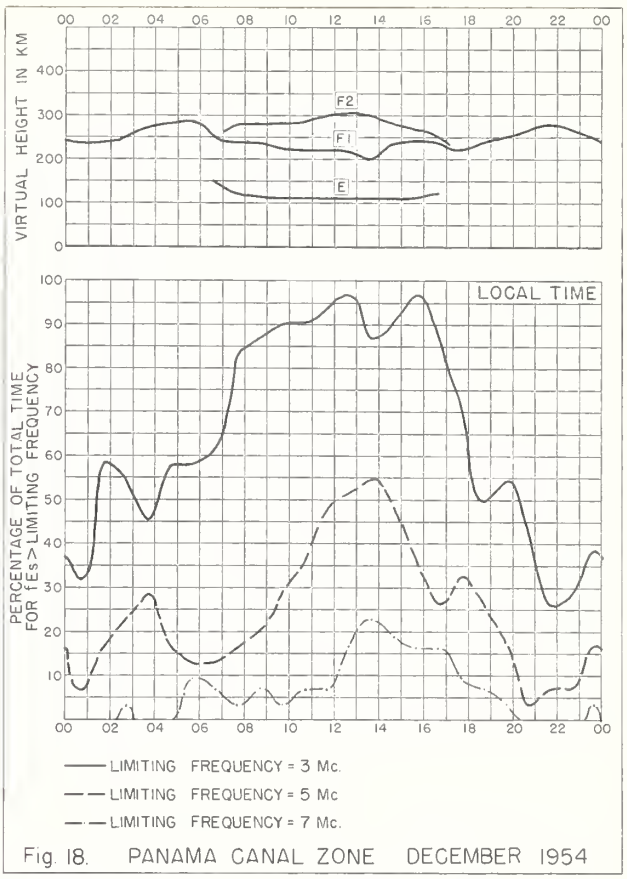


Fig. 18. PANAMA CANAL ZONE DECEMBER 1954

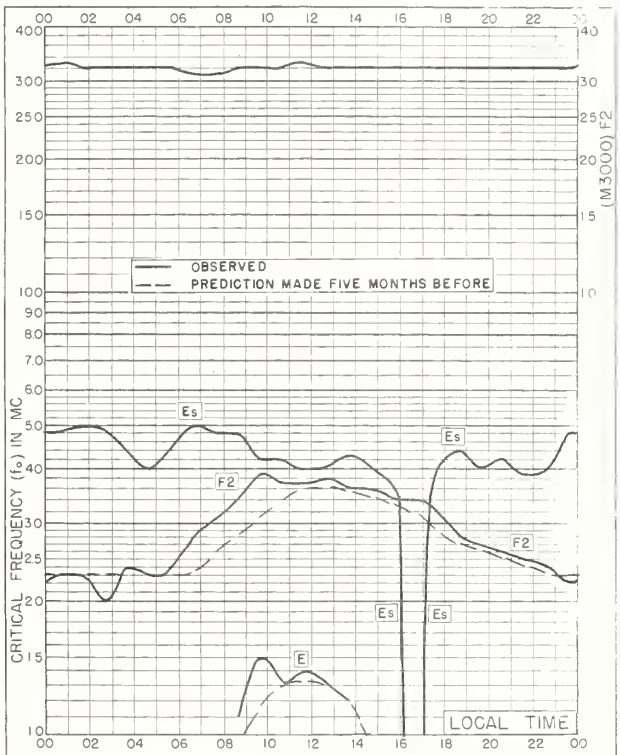
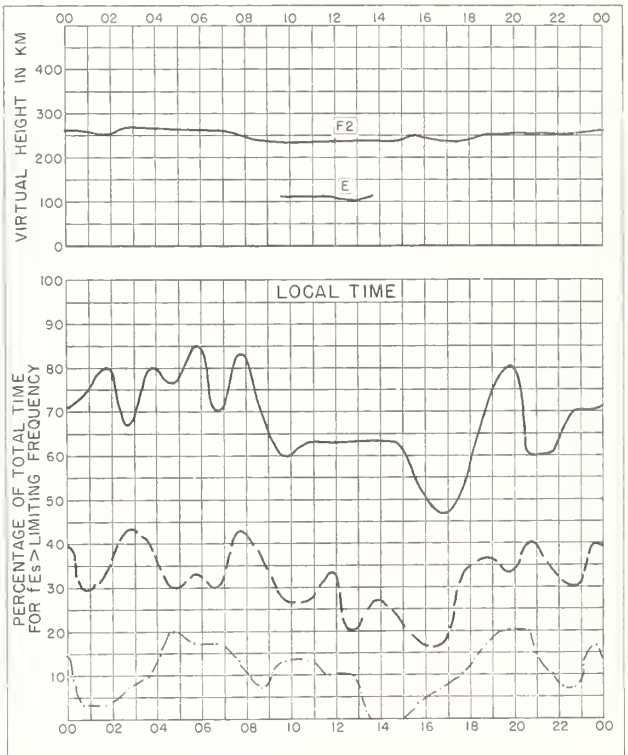


Fig. 19. RESOLUTE BAY, CANADA
74.7°N, 94.9°W NOVEMBER 1954



NOVEMBER 1954

Fig. 20. RESOLUTE BAY, CANADA

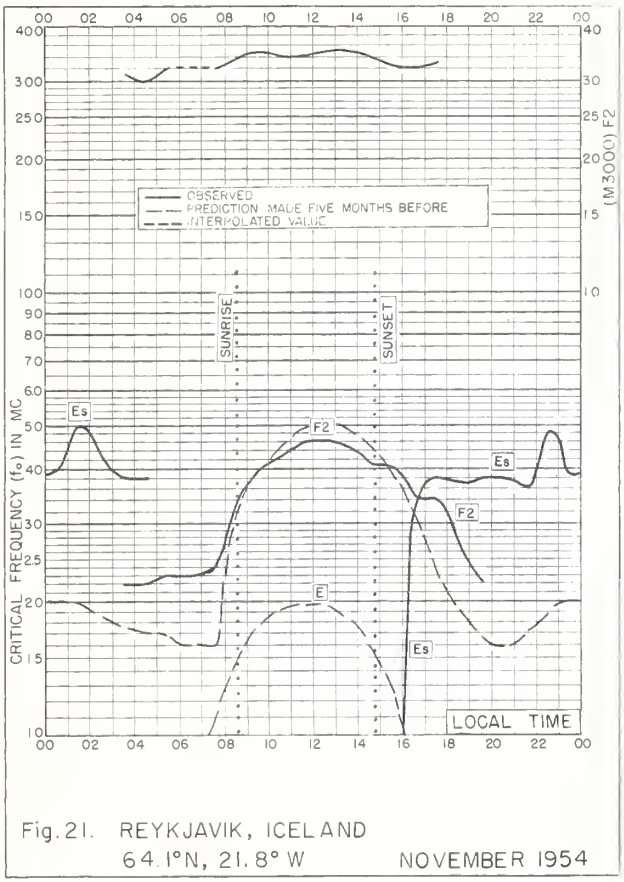
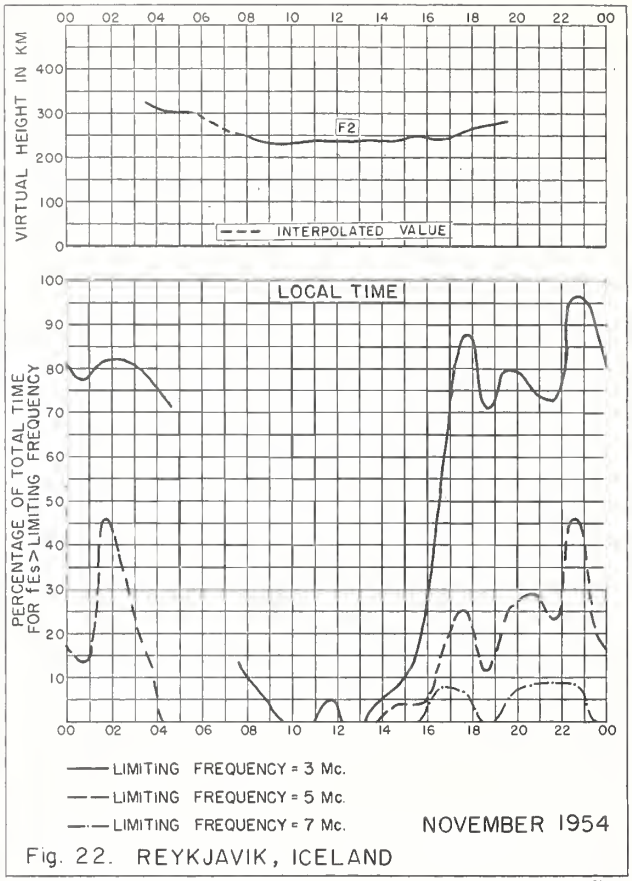


Fig. 21. REYKJAVIK, ICELAND
64.1°N, 21.8° W NOVEMBER 1954



NOVEMBER 1954

Fig. 22. REYKJAVIK, ICELAND

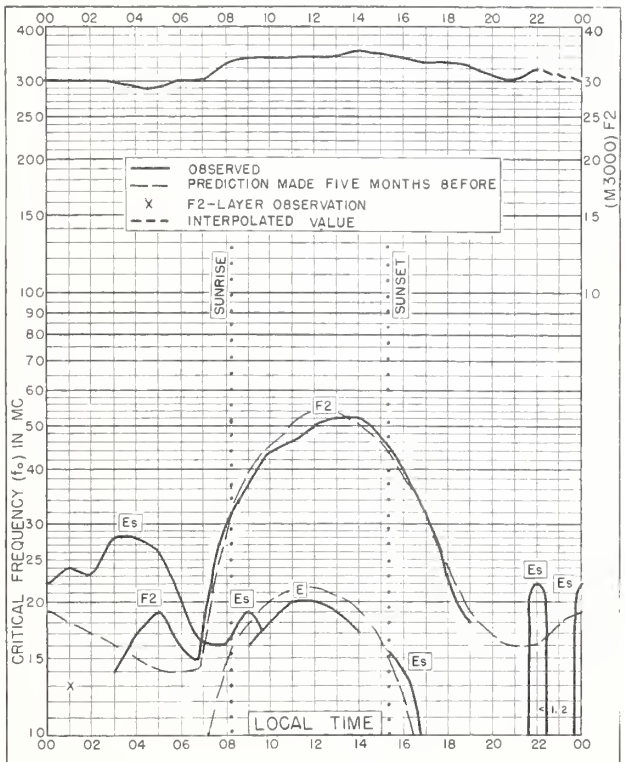
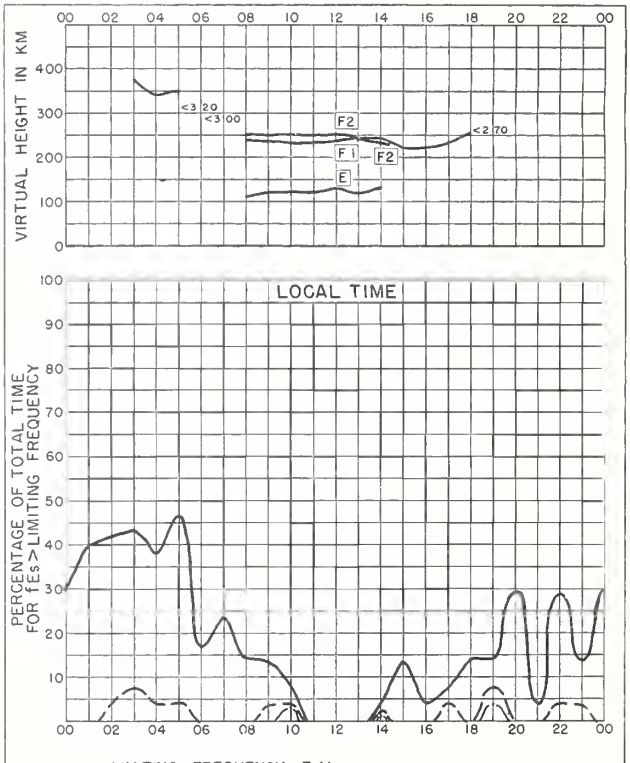


Fig 23. ANCHORAGE, ALASKA
61.2°N, 149.9° W NOVEMBER 1954



NOVEMBER 1954

Fig. 24. ANCHORAGE, ALASKA

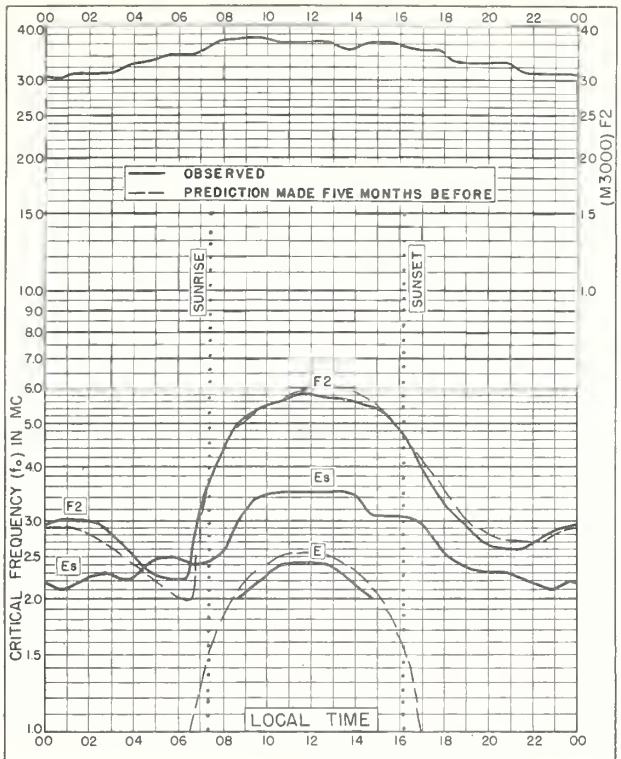
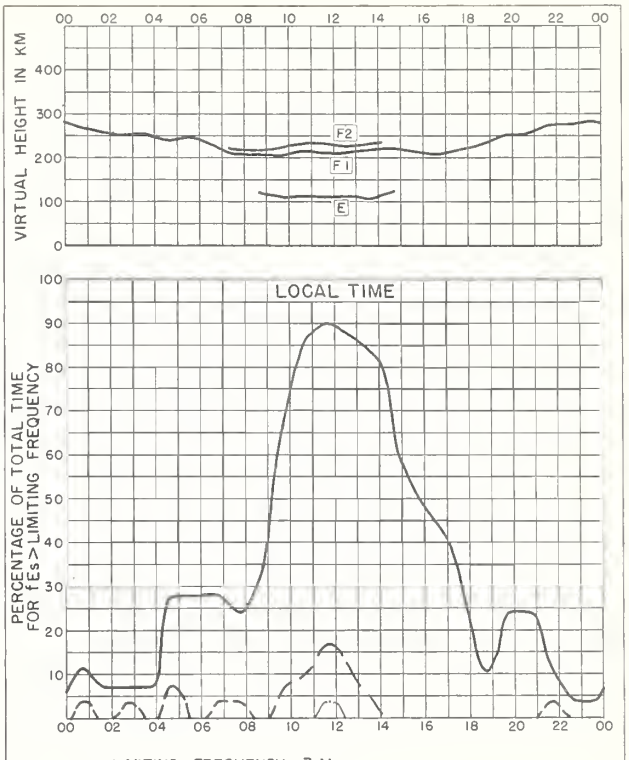


Fig. 25. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E NOVEMBER 1954



NOVEMBER 1954

Fig. 26. LINDAU/HARZ, GERMANY

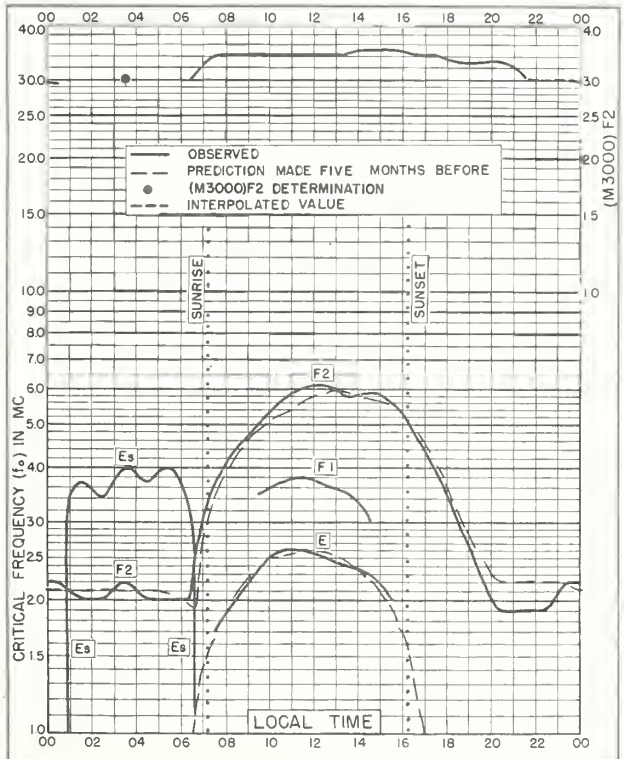


Fig. 27. WINNIPEG, CANADA
49.9°N, 97.4°W NOVEMBER 1954

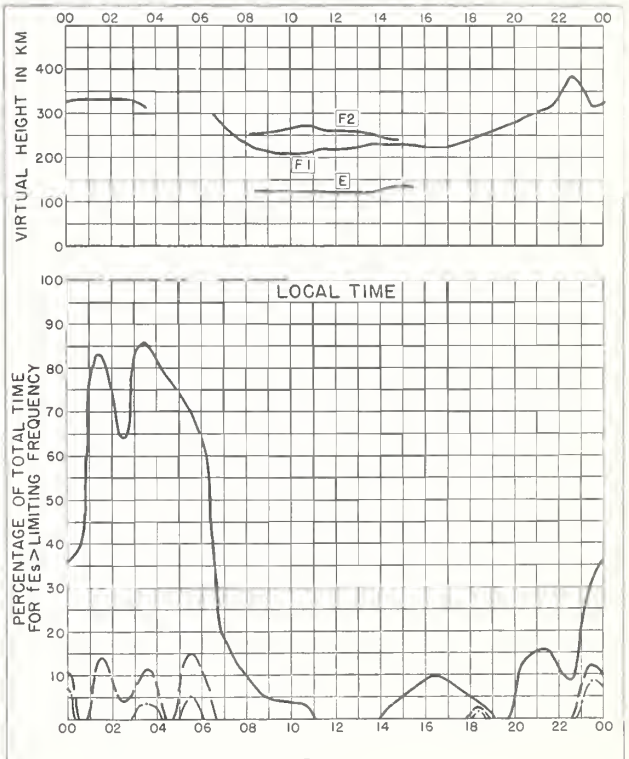


Fig. 28. WINNIPEG, CANADA NOVEMBER 1954

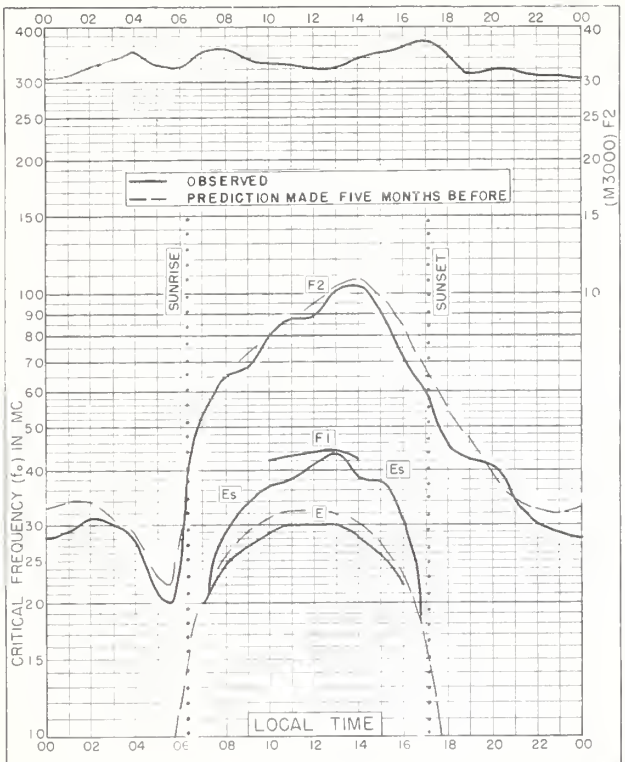


Fig 29. OKINAWA I
26.3°N, 127.8°E NOVEMBER 1954

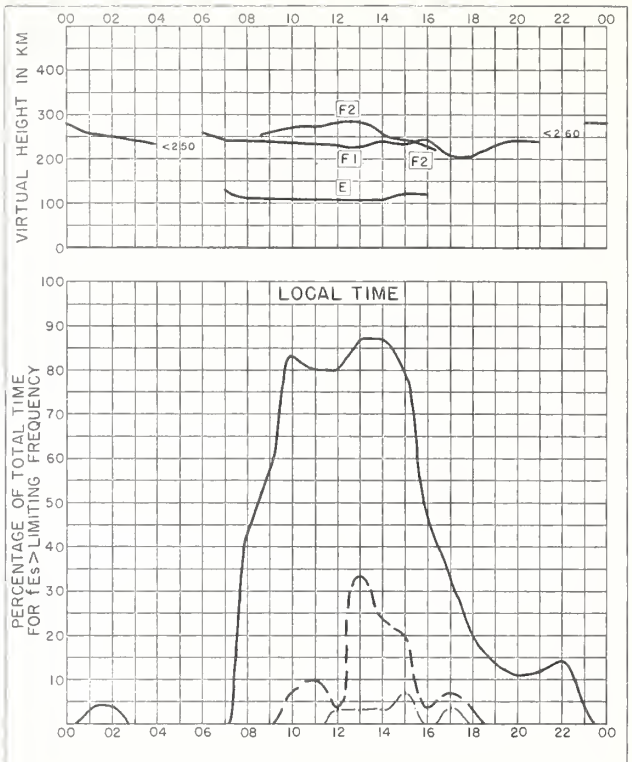


Fig 30. OKINAWA I. NOVEMBER 1954

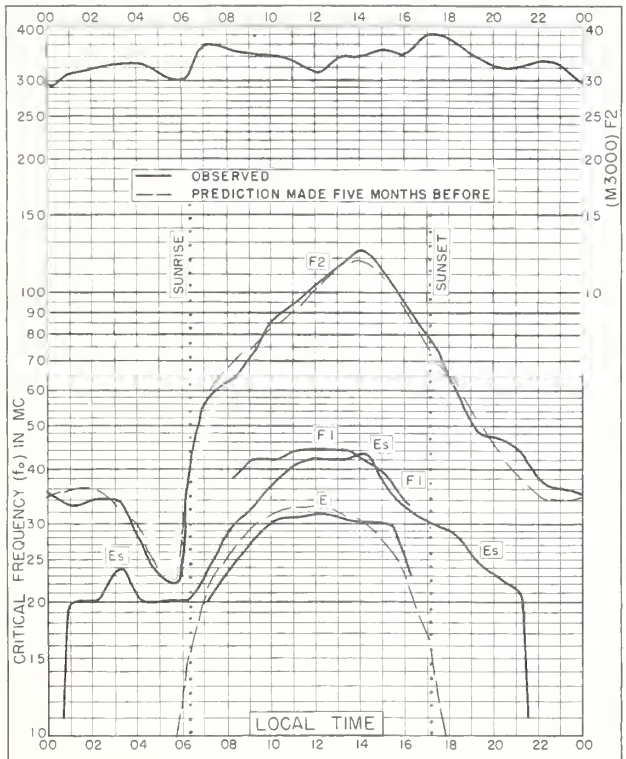


Fig. 31. FORMOSA, CHINA
25.0°N, 121.5°E NOVEMBER 1954

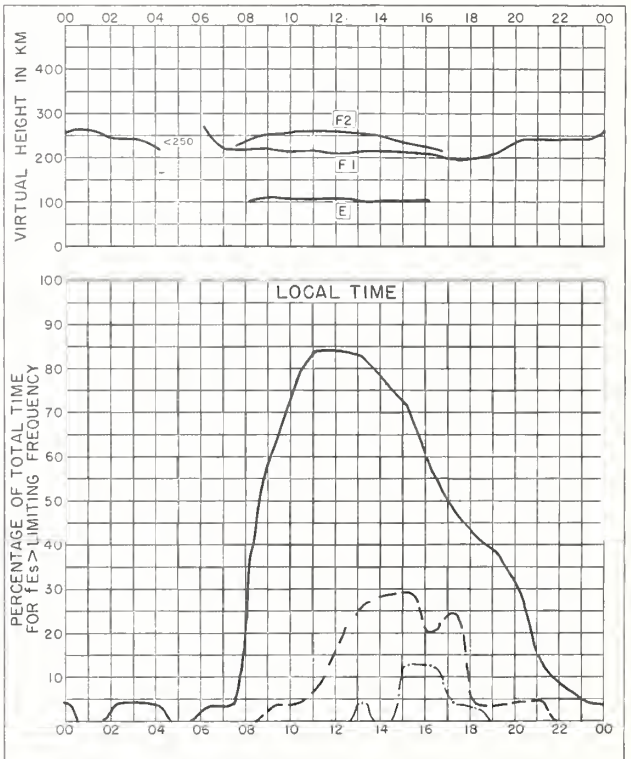


Fig. 32. FORMOSA, CHINA NOVEMBER 1954

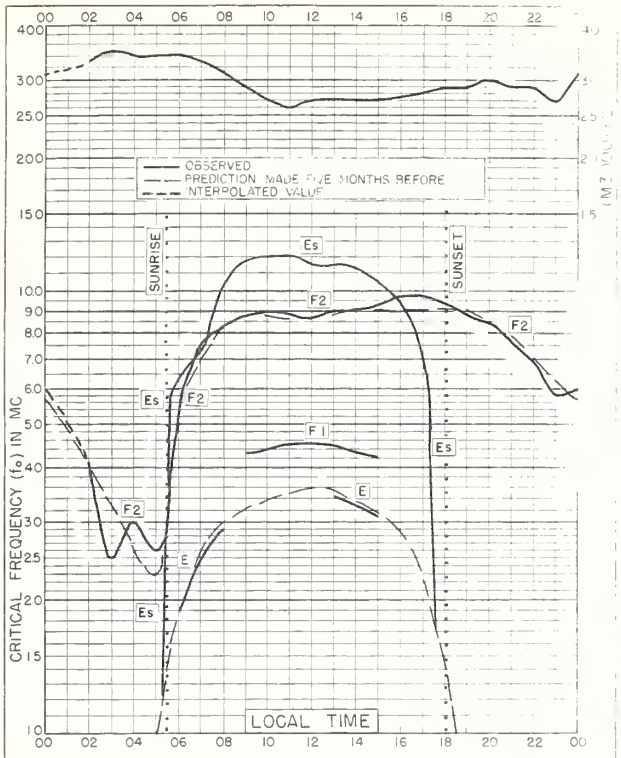


Fig. 33. HUANCAYO, PERU
12.0°S, 75.3°W NOVEMBER 1954

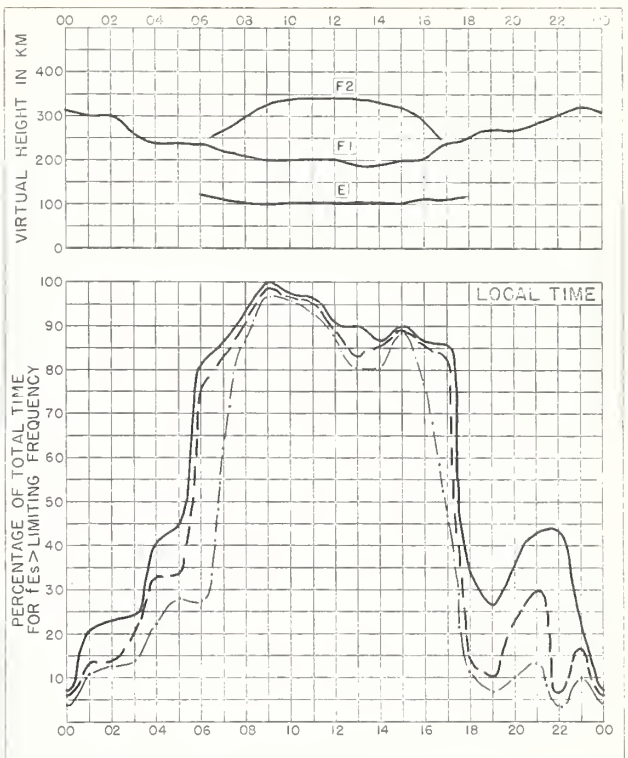


Fig. 34. HUANCAYO, PERU NOVEMBER 1954

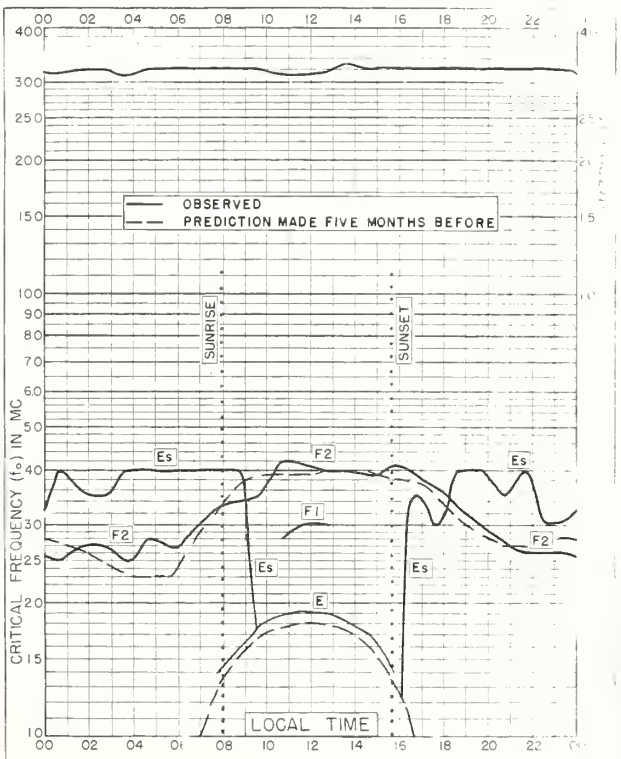


Fig. 35. RESOLUTE BAY, CANADA
74.7°N, 94.9°W OCTOBER 1954

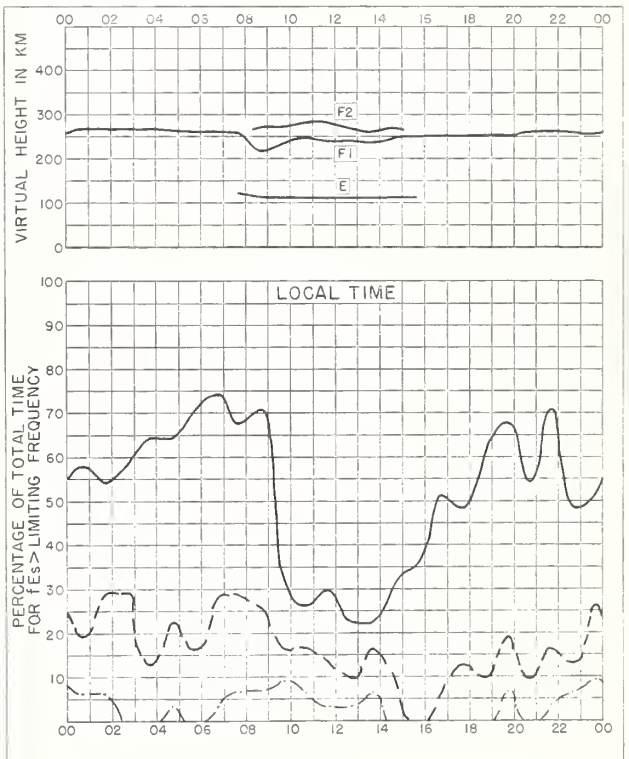


Fig. 36. RESOLUTE BAY, CANADA OCTOBER 1954

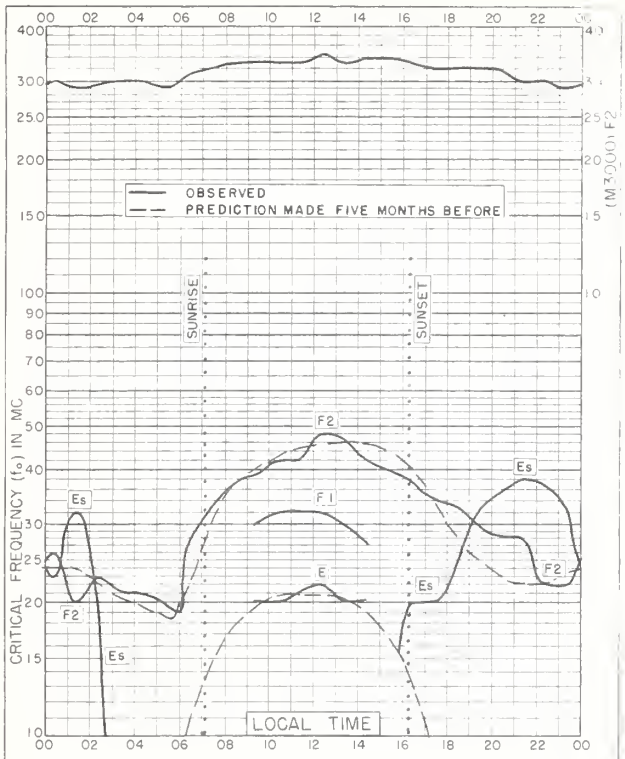


Fig. 37. KIRUNA, SWEDEN
67.8°N, 20.3°E OCTOBER 1954

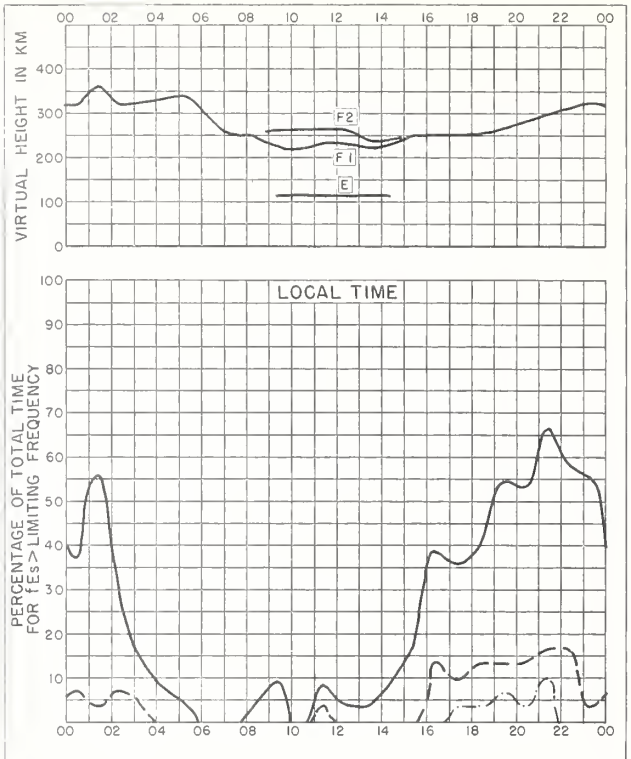


Fig. 38. KIRUNA, SWEDEN OCTOBER 1954

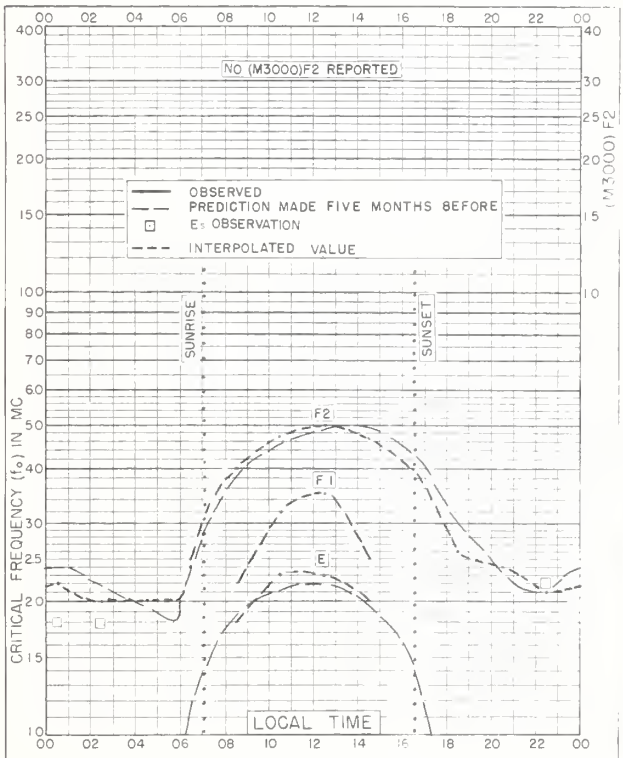


Fig 39. LULEA, SWEDEN
65 6°N, 22 1°E OCTOBER 1954

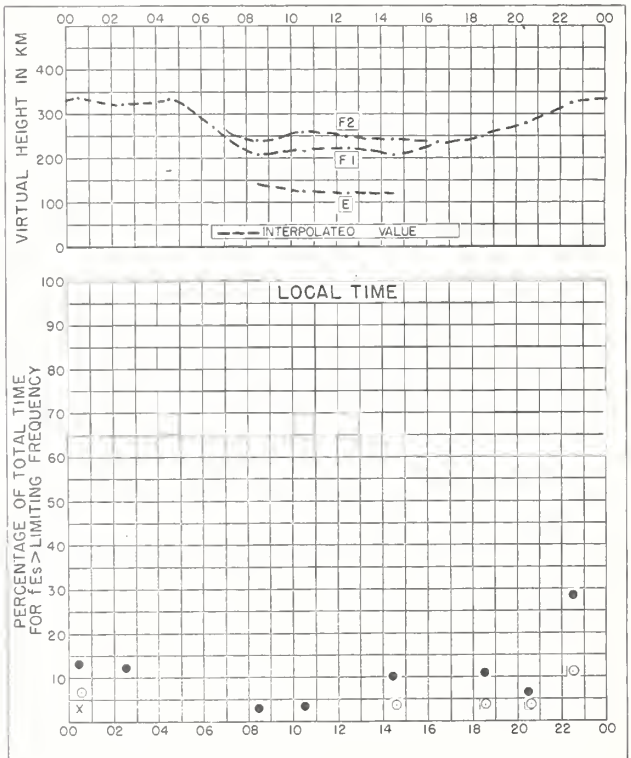


Fig. 40. LULEA, SWEDEN OCTOBER 1954

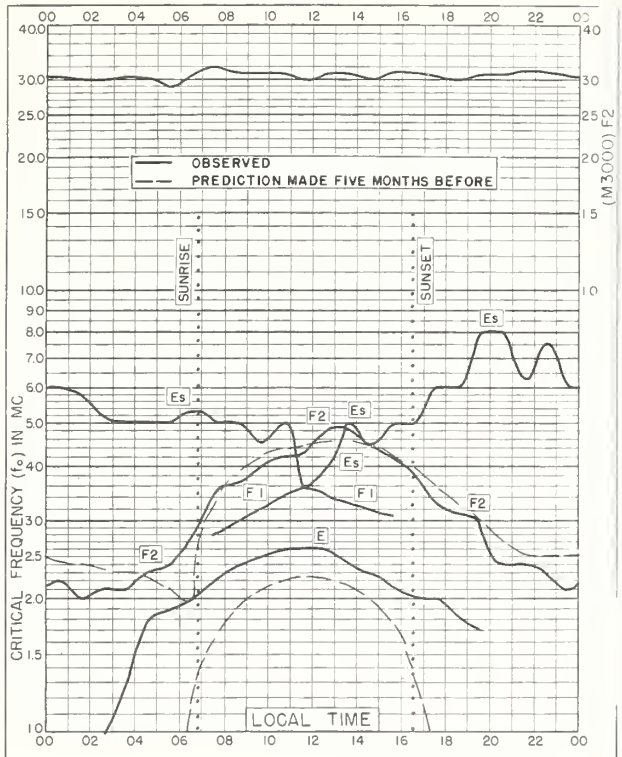


Fig. 41. BAKER LAKE, CANADA
64.3°N, 96.0°W OCTOBER 1954

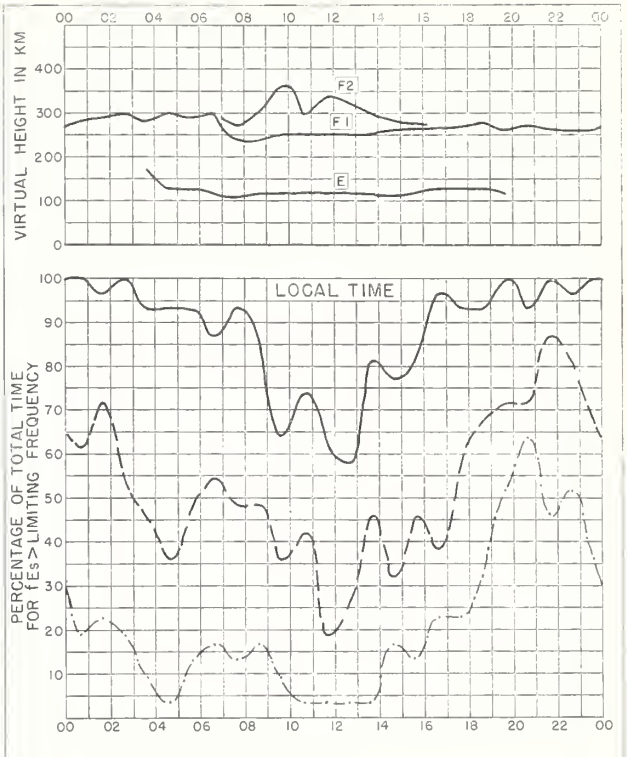


Fig. 42. BAKER LAKE, CANADA OCTOBER 1954

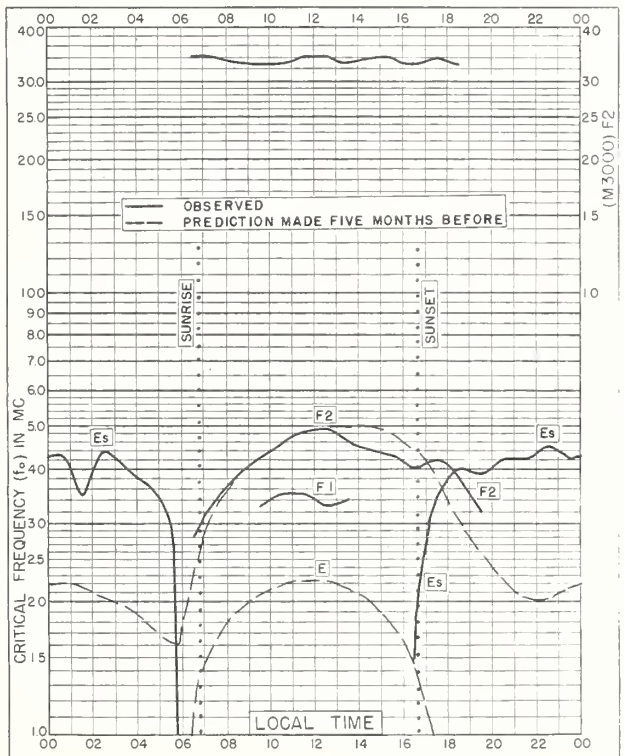


Fig. 43. REYKJAVIK, ICELAND
64.1°N, 21.8°W OCTOBER 1954

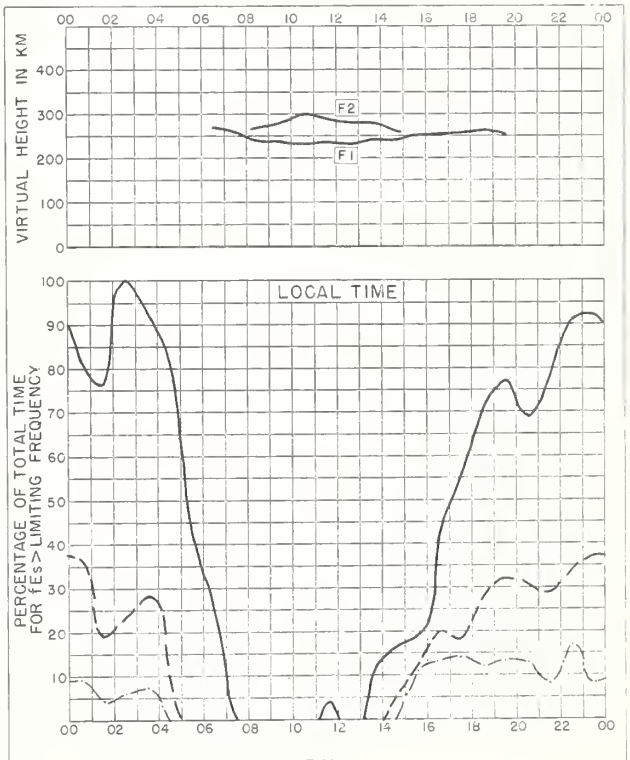


Fig 44. REYKJAVIK, ICELAND OCTOBER 1954

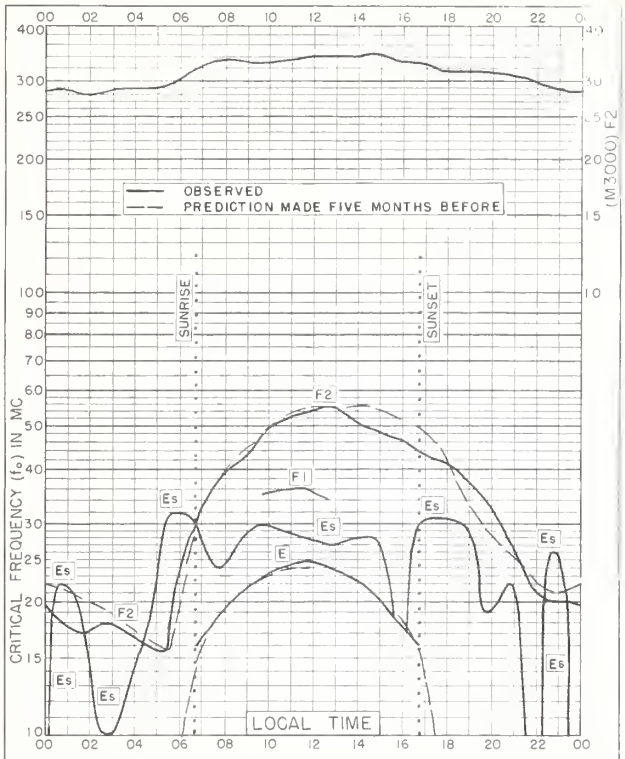


Fig. 45. OSLO, NORWAY
60.0°N, 11.1°E OCTOBER 1954

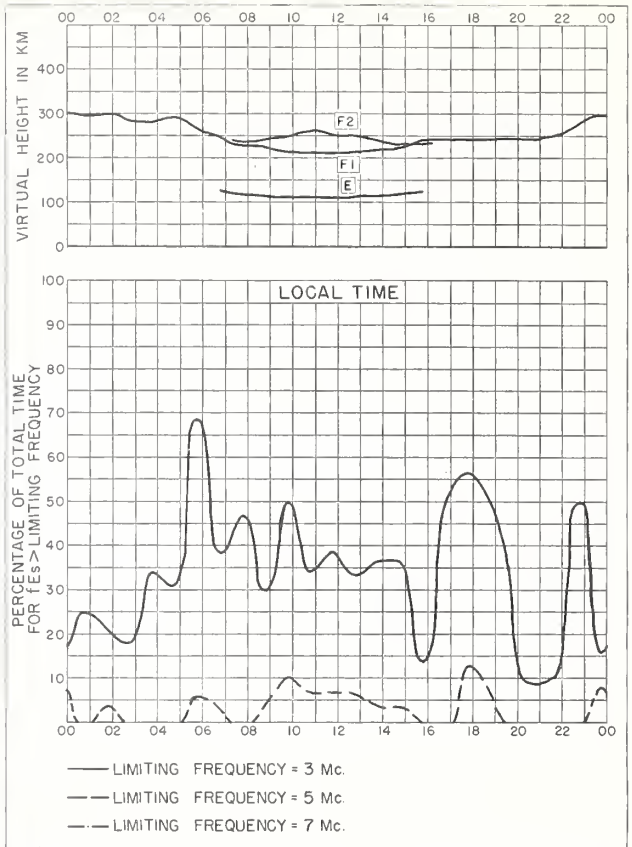


Fig. 46. OSLO, NORWAY OCTOBER 1954

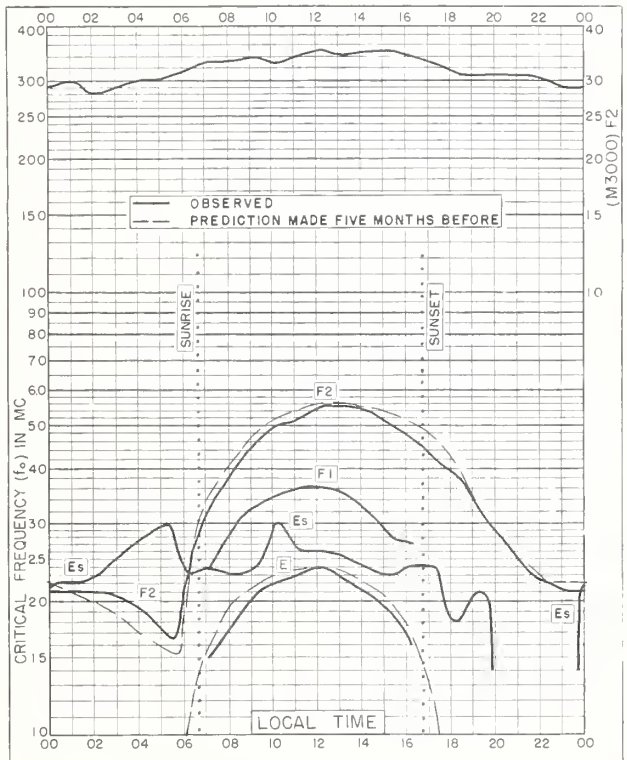


Fig. 47. UPSALA, SWEDEN
59.8°N, 17.6°E OCTOBER 1954

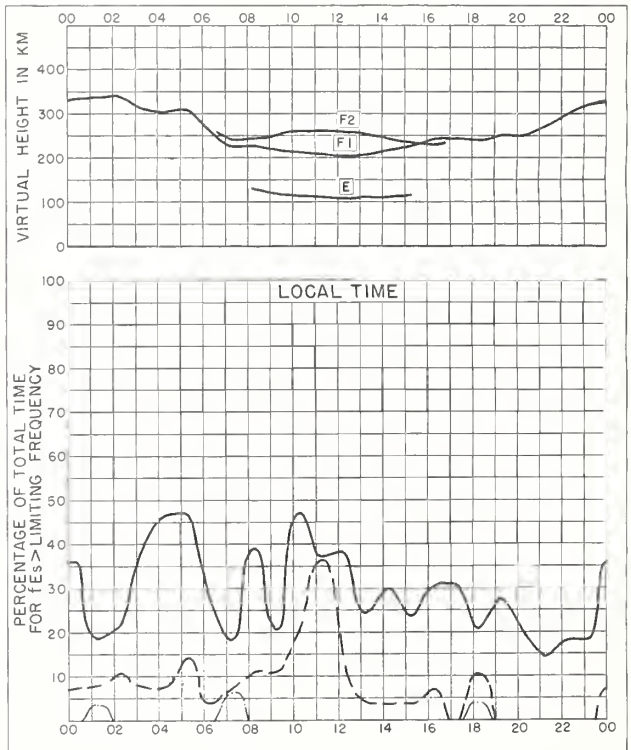


Fig. 48. UPSALA, SWEDEN OCTOBER 1954

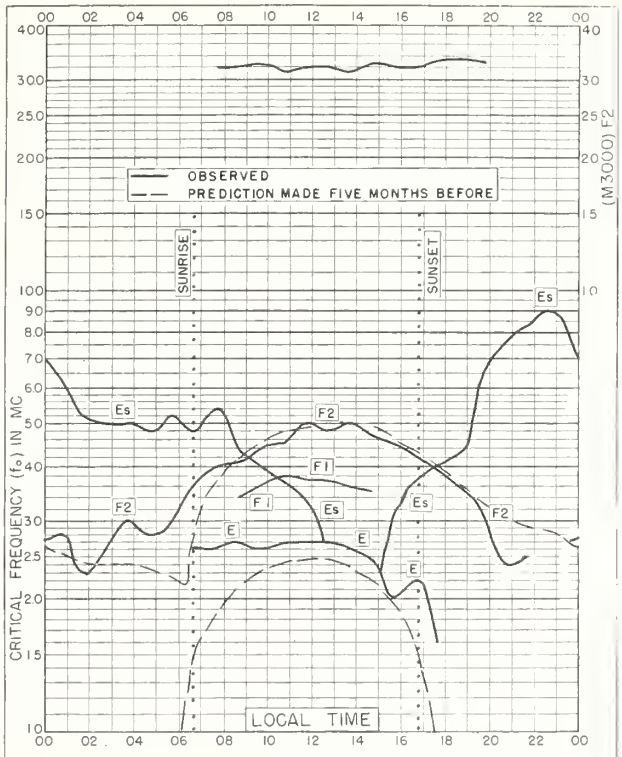


Fig. 49 CHURCHILL, CANADA
58.8°N, 94.2°W. OCTOBER 1954

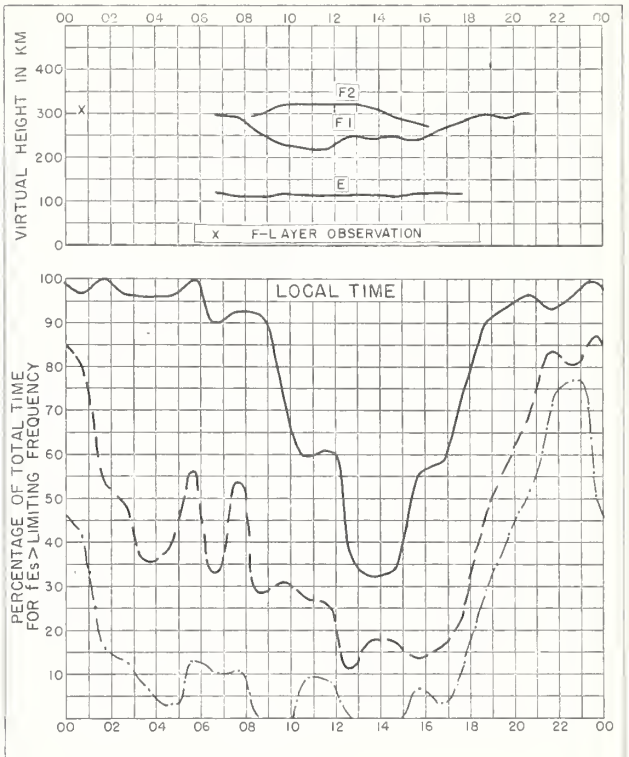


Fig. 50. CHURCHILL, CANADA OCTOBER 1954

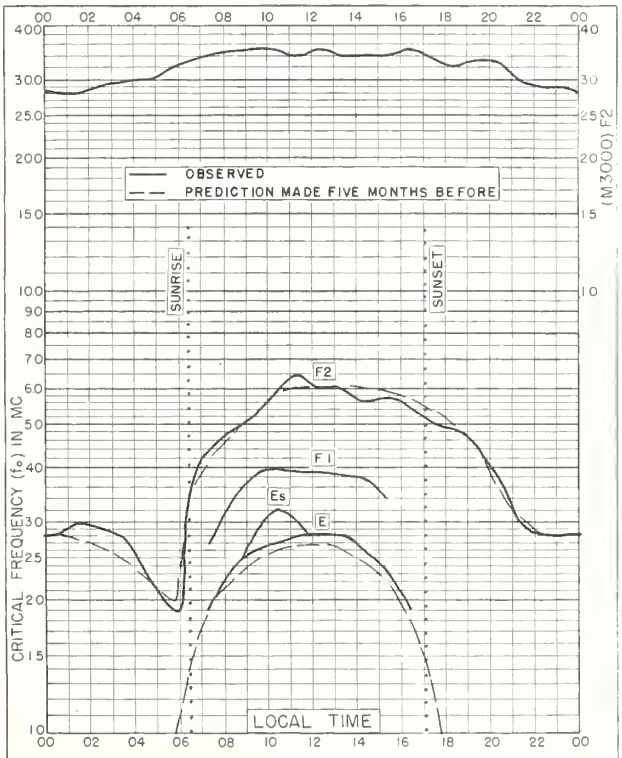


Fig. 51. De BILT, HOLLAND
52.1°N, 5.2°E OCTOBER 1954

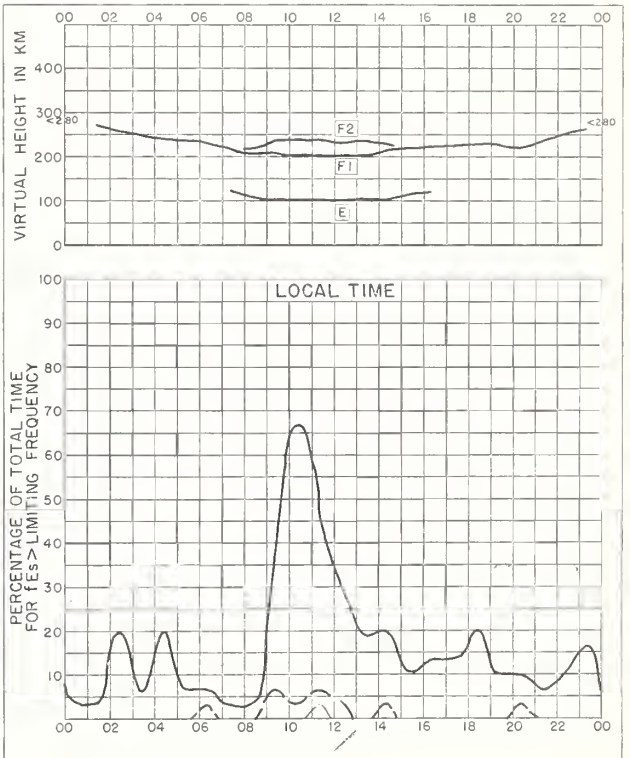


Fig. 52. De BILT, HOLLAND OCTOBER 1954

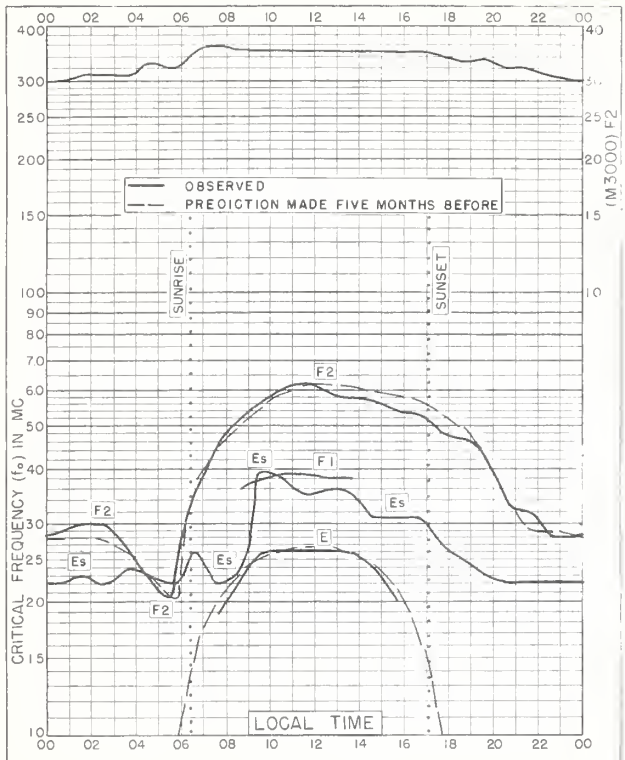
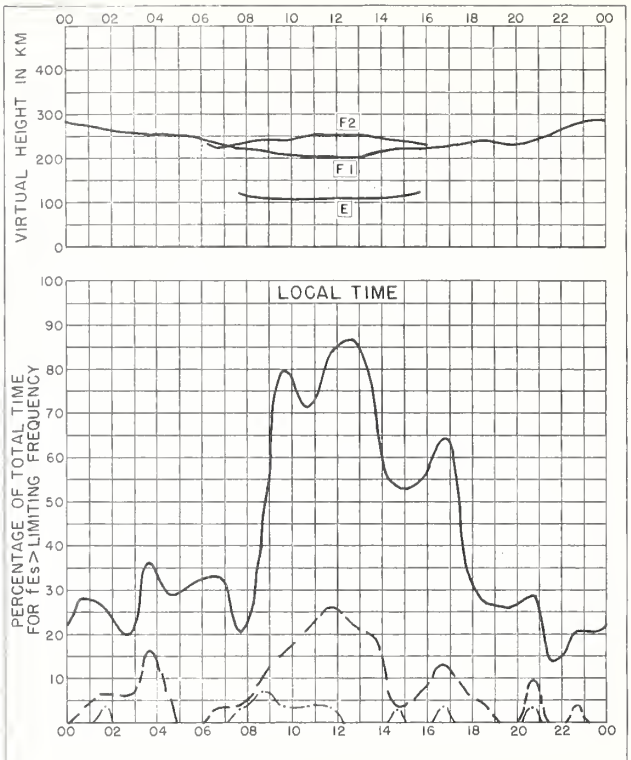


Fig. 53. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E OCTOBER 1954



OCTOBER 1954

Fig. 54. LINDAU/HARZ, GERMANY

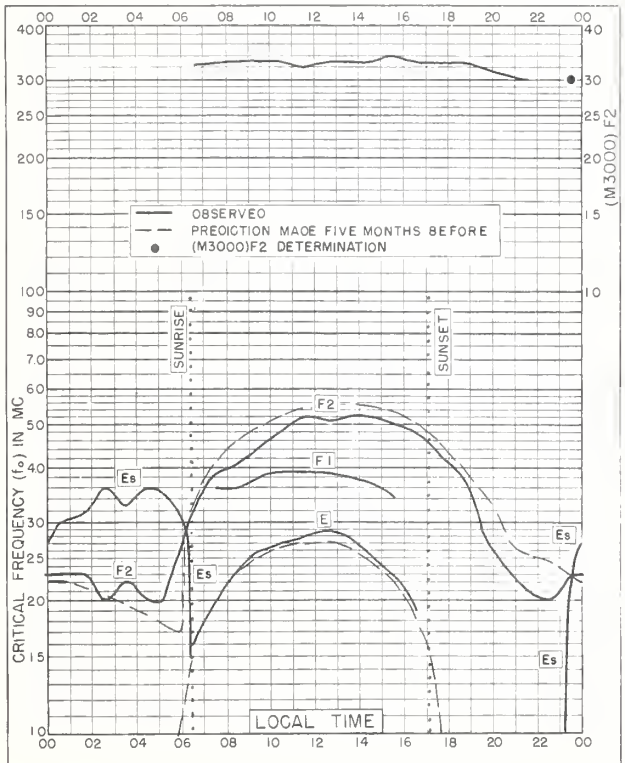


Fig 55. WINNIPEG, CANADA
49.9°N, 97.4°W OCTOBER 1954

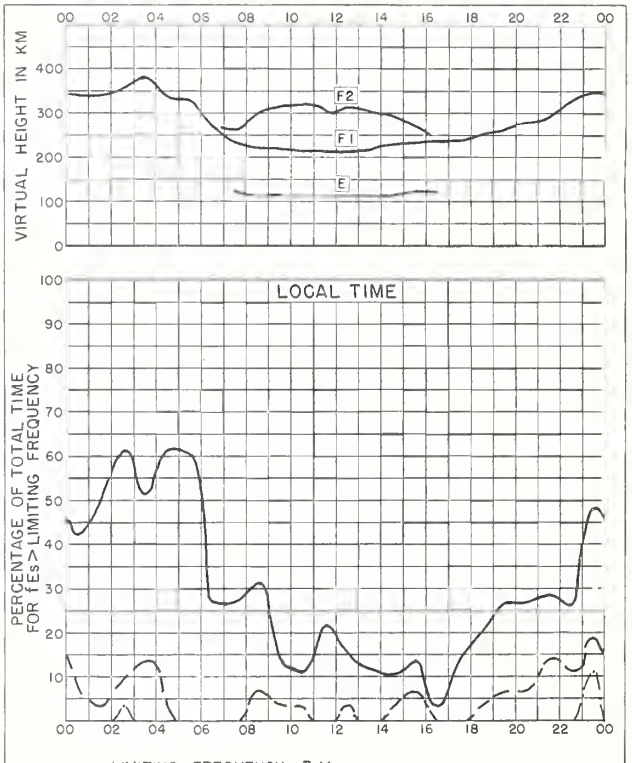


Fig. 56. WINNIPEG, CANADA OCTOBER 1954

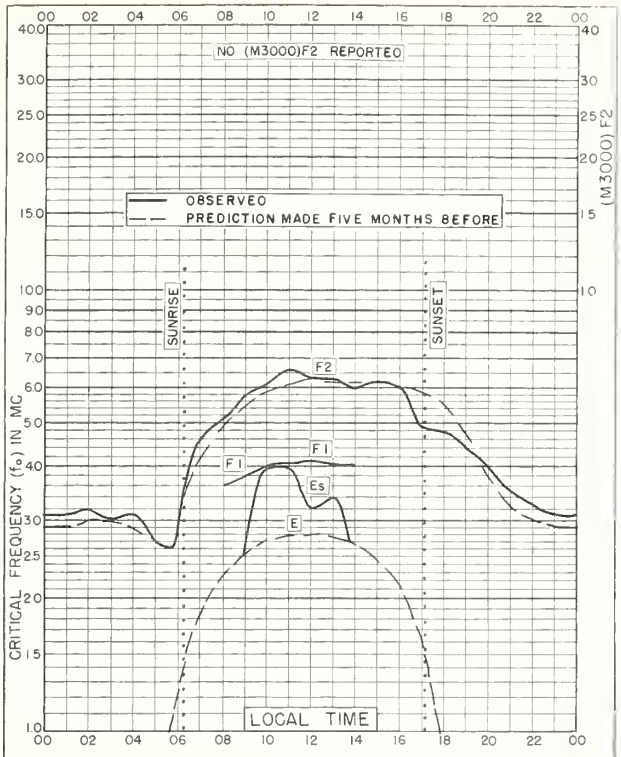


Fig. 57. GRAZ, AUSTRIA
47.1°N, 15.5°E OCTOBER 1954

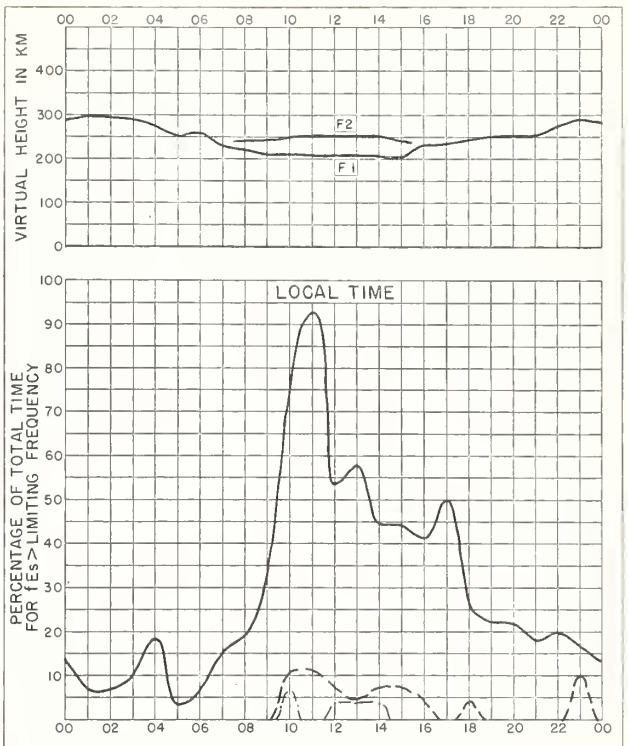


Fig. 58. GRAZ, AUSTRIA OCTOBER 1954

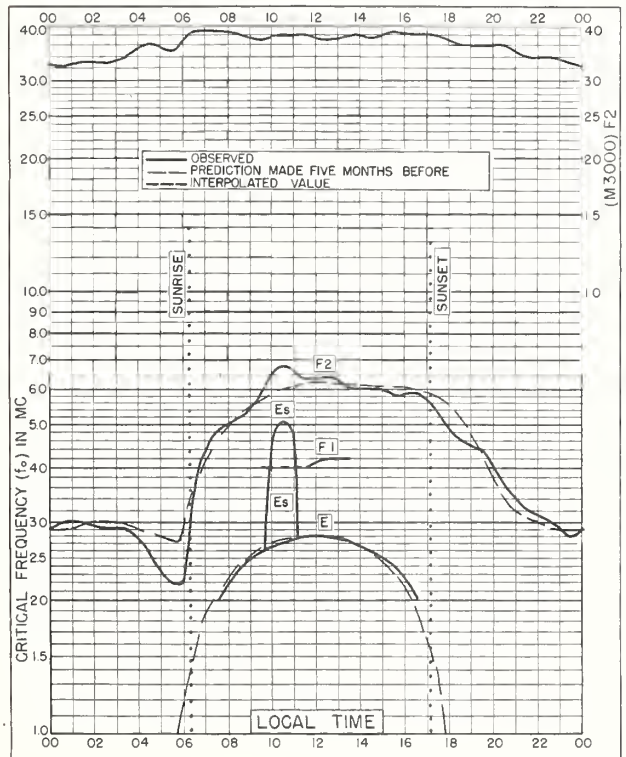


Fig. 59. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E OCTOBER 1954

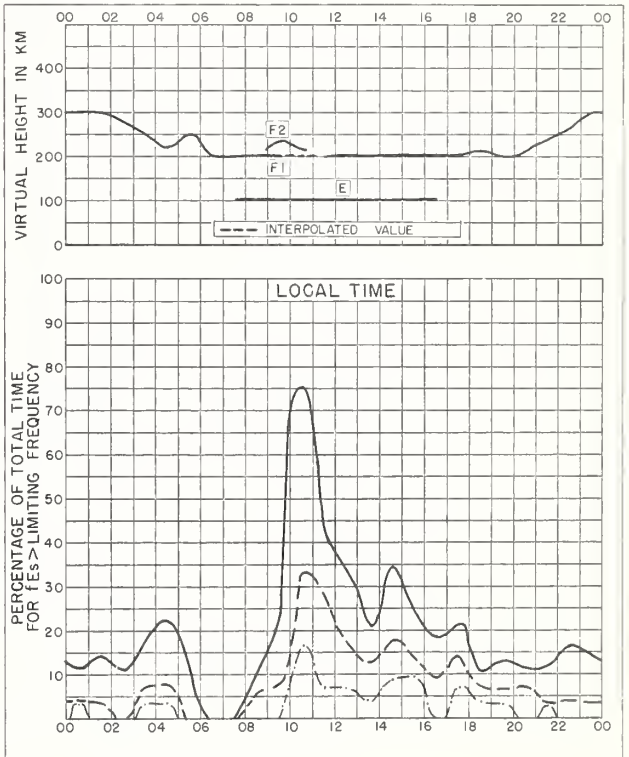


Fig. 60. SCHWARZENBURG, SWITZERLAND OCTOBER 1954

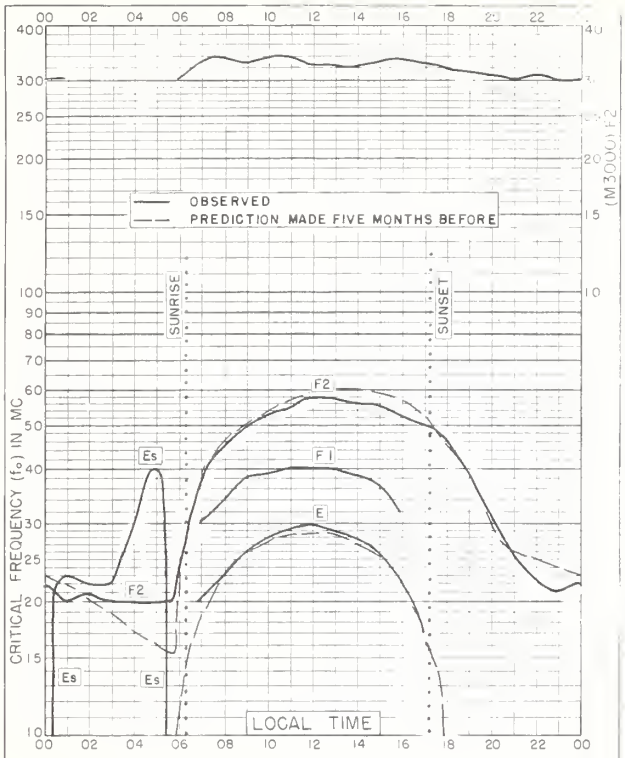


Fig. 61. OTTAWA, CANADA
45.4°N, 75.9°W OCTOBER 1954

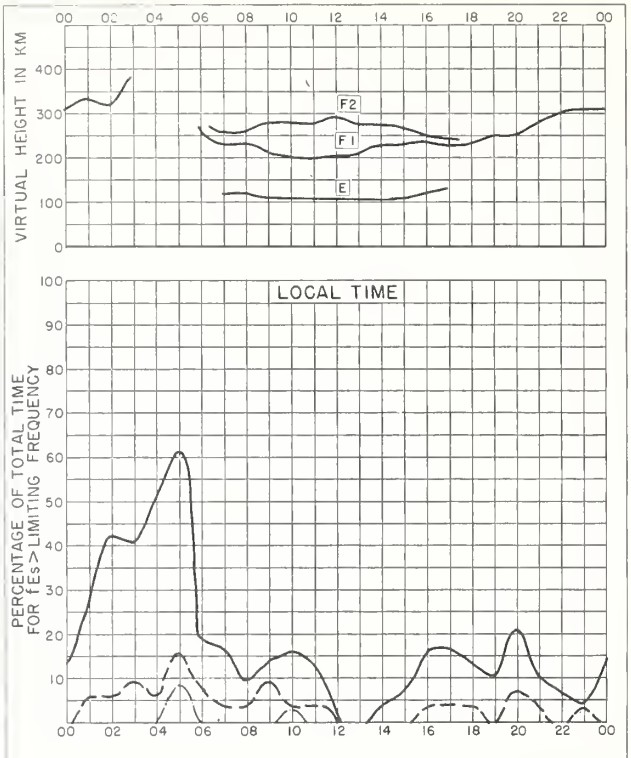


Fig. 62. OTTAWA, CANADA OCTOBER 1954

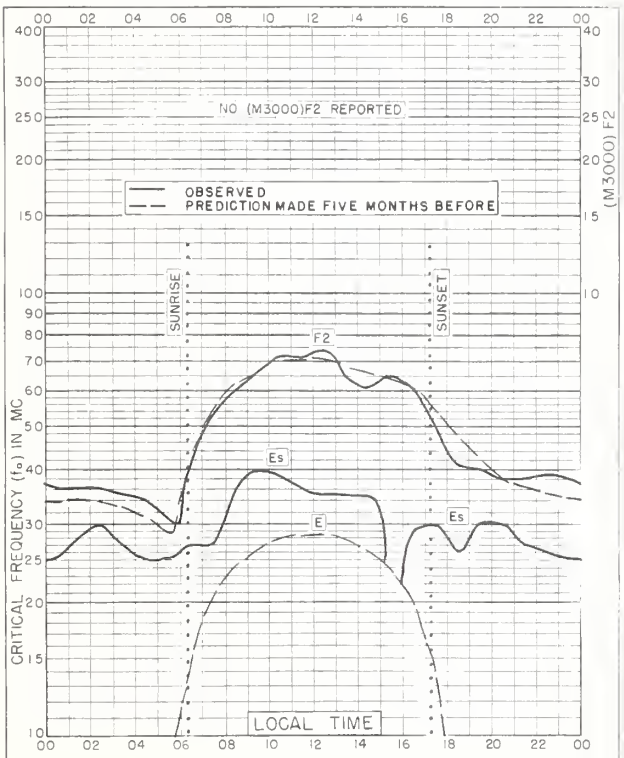


Fig 63. WAKKANAI, JAPAN
45 40°N, 141.7°E OCTOBER 1954

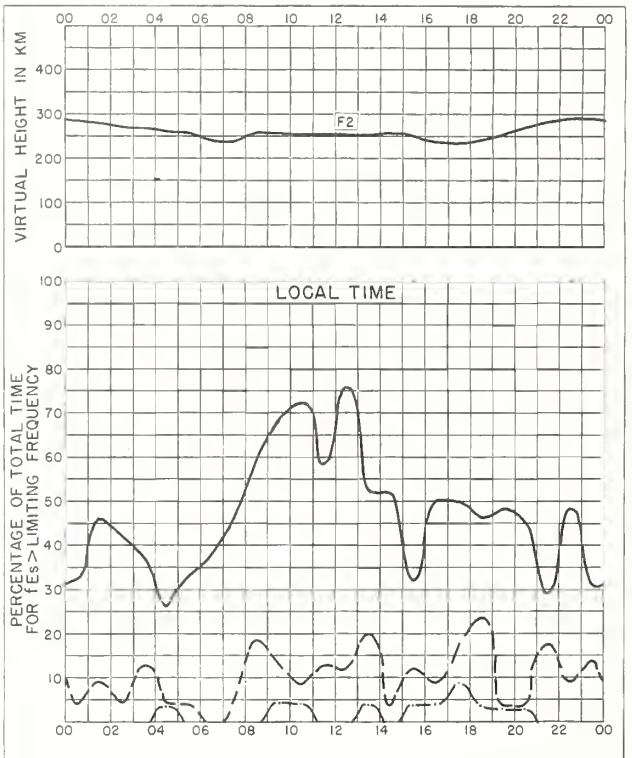


Fig. 64. WAKKANAI, JAPAN OCTOBER 1954

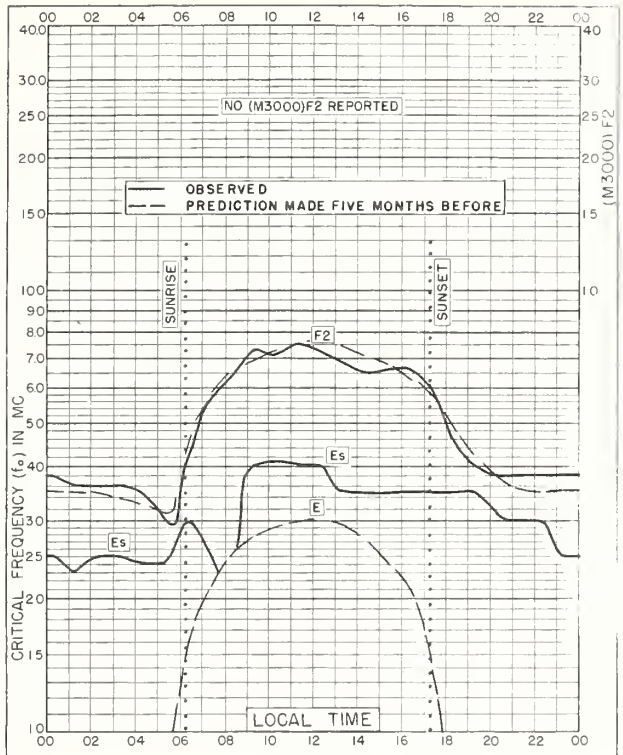


Fig. 65. AKITA, JAPAN
39.7°N, 140.1°E OCTOBER 1954

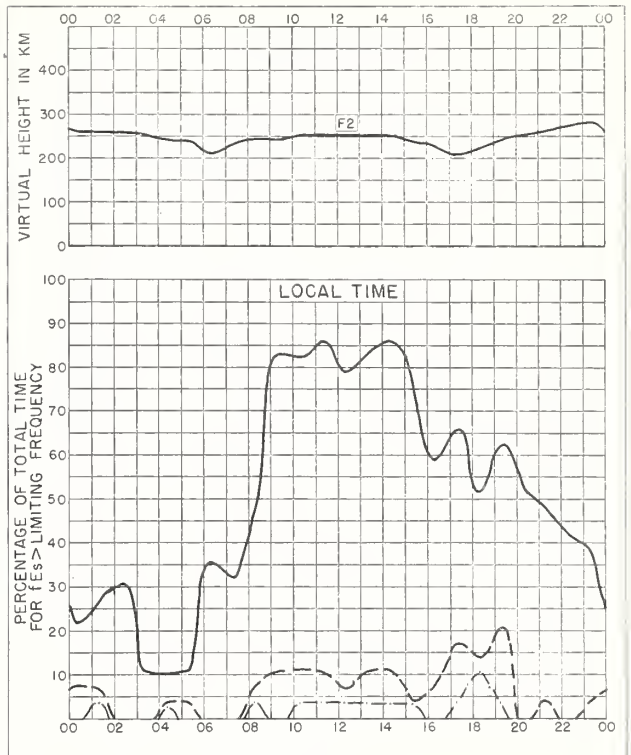


Fig. 66. AKITA, JAPAN OCTOBER 1954

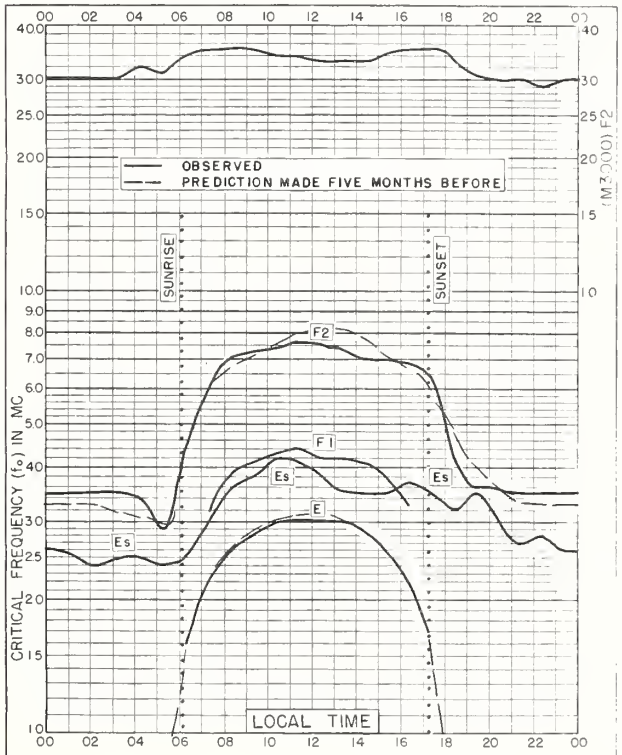


Fig. 67. TOKYO, JAPAN
35.7°N, 139.5°E OCTOBER 1954

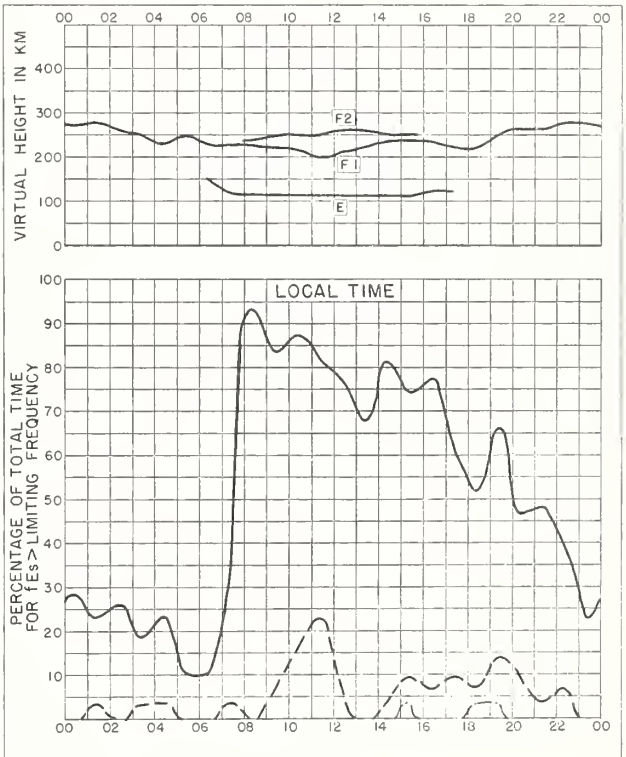


Fig. 68. TOKYO, JAPAN OCTOBER 1954

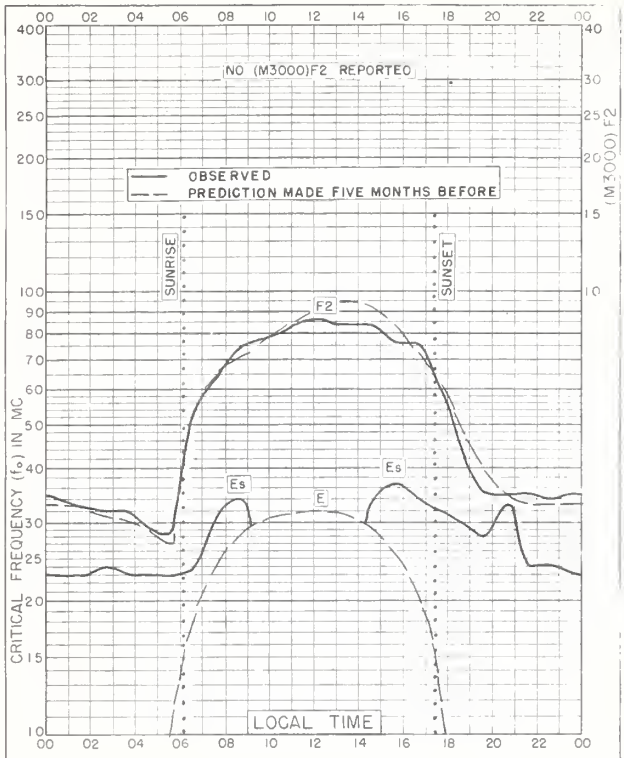


Fig 69. YAMAGAWA, JAPAN
31.2°N, 130.6°E OCTOBER 1954

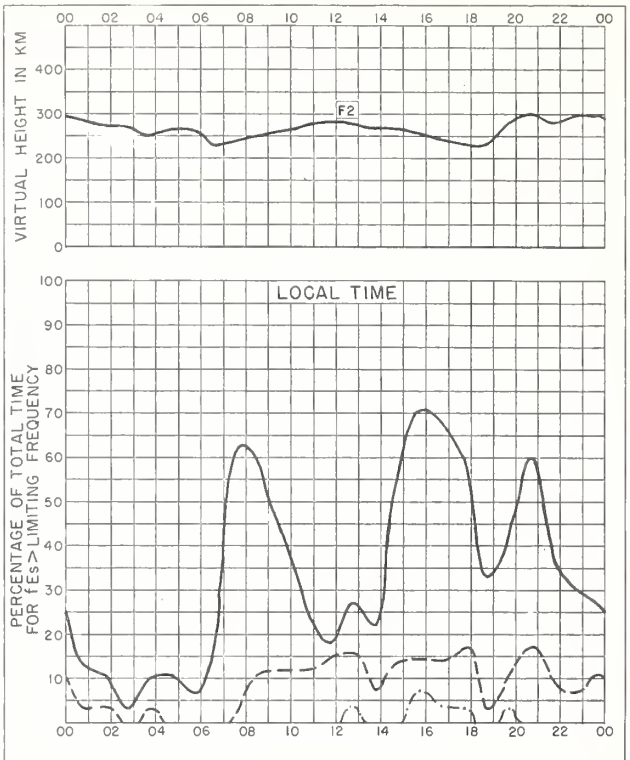


Fig 70. YAMAGAWA, JAPAN OCTOBER 1954

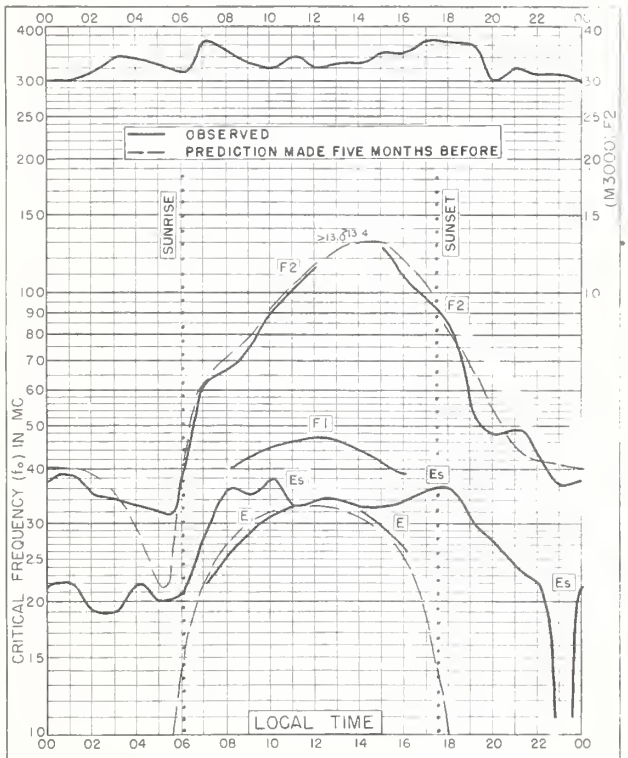


Fig 71. FORMOSA, CHINA
25.0°N, 121.5°E OCTOBER 1954

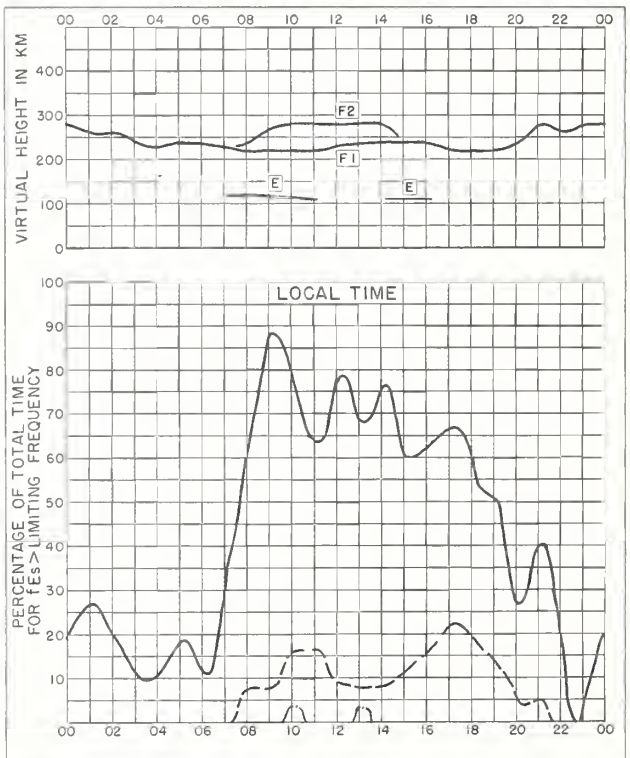


Fig 72. FORMOSA, CHINA OCTOBER 1954

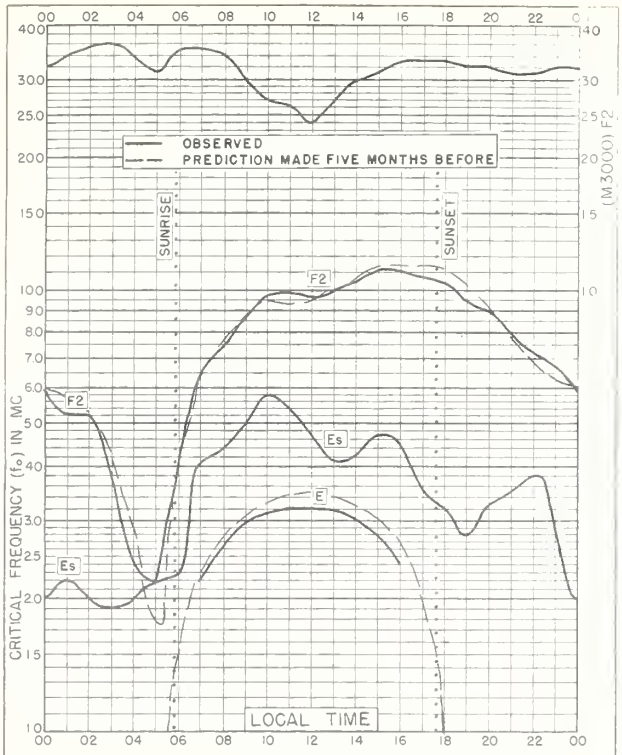


Fig. 73. BAGUIO, P. I.
16.4°N, 120.6°E OCTOBER 1954

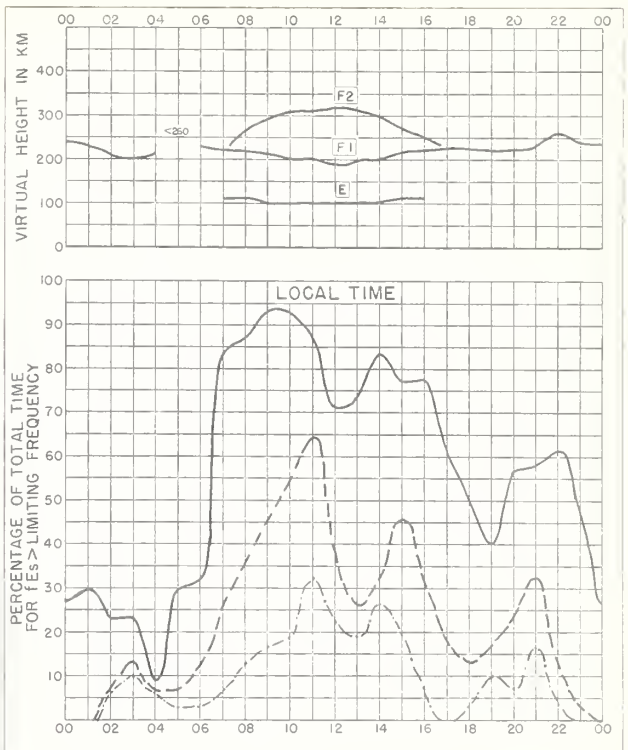


Fig. 74. BAGUIO, P. I. OCTOBER 1954

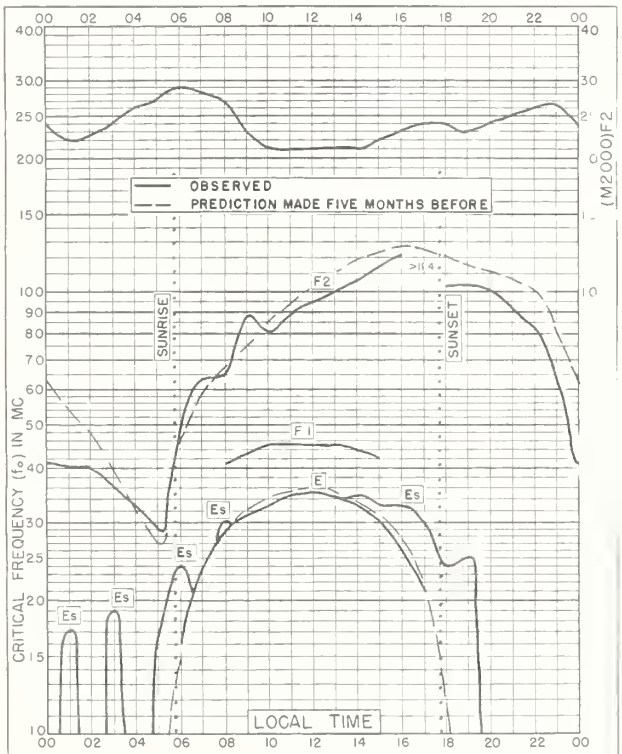


Fig. 75. LEOPOLDVILLE, BELGIAN CONGO
4.3°S, 15.3°E OCTOBER 1954

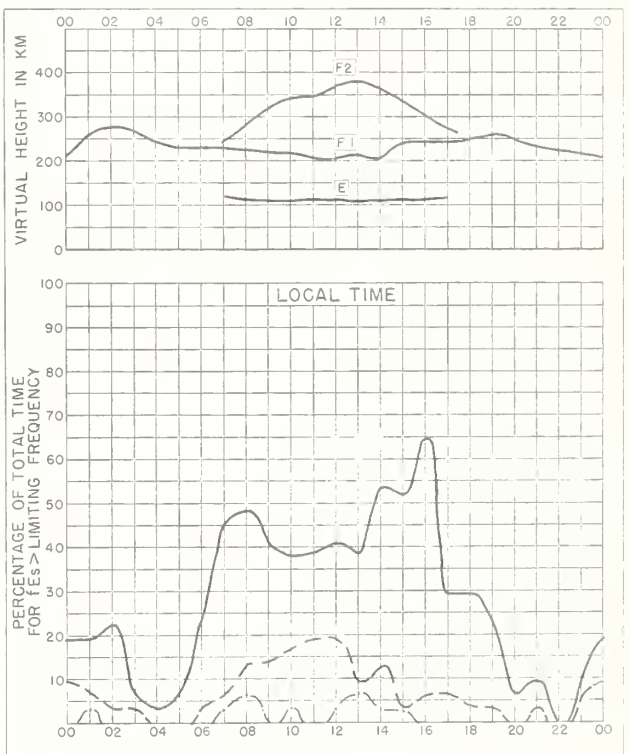


Fig 76 LEOPOLDVILLE, BELGIAN CONGO OCTOBER 1954

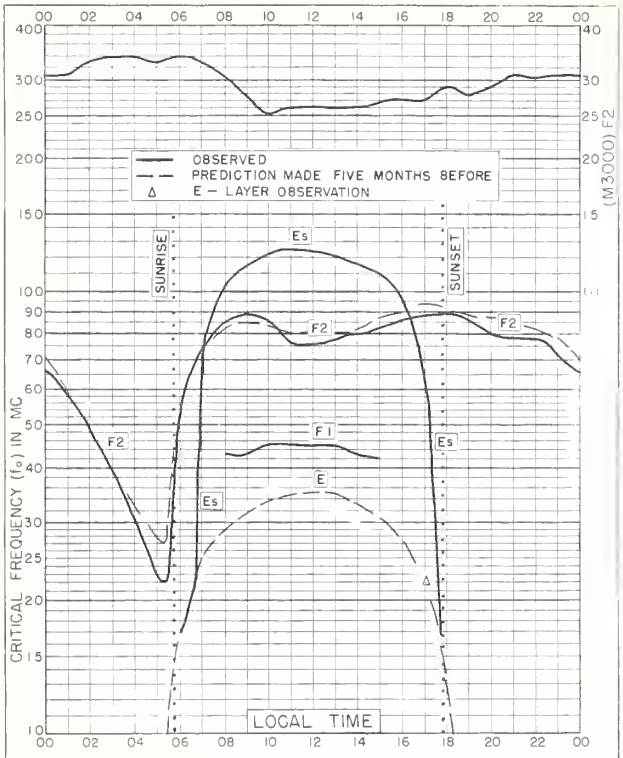


Fig. 77. HUANCAYO, PERU
12.0°S, 75.3°W OCTOBER 1954

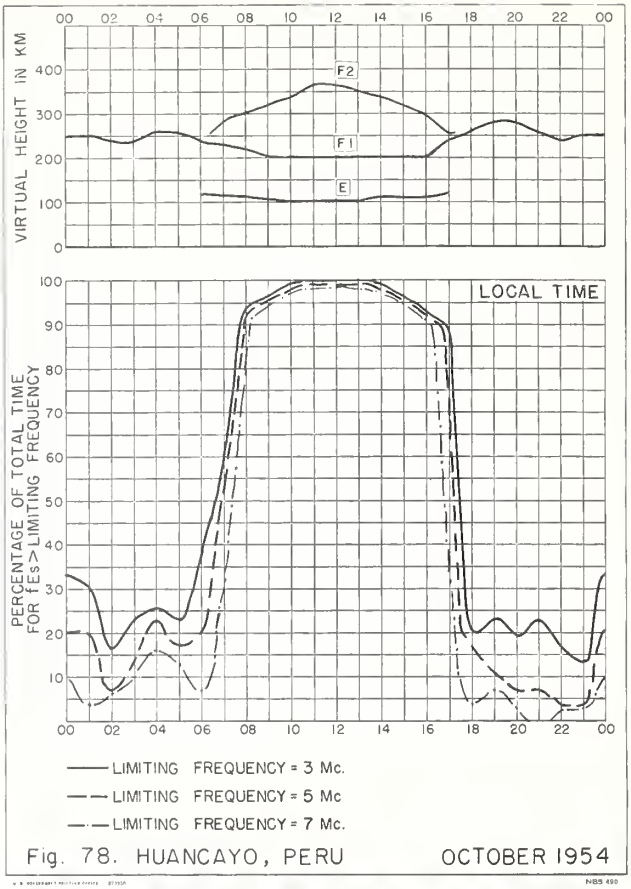


Fig. 78. HUANCAYO, PERU OCTOBER 1954

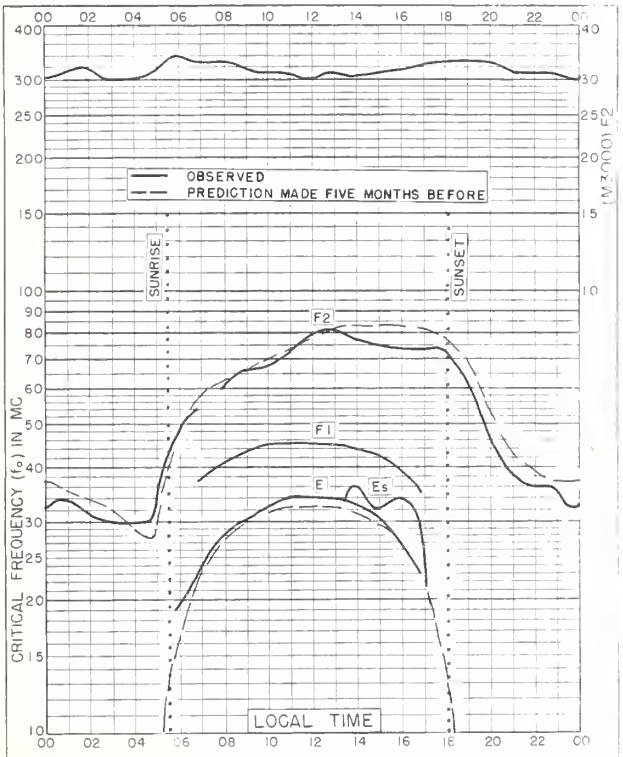
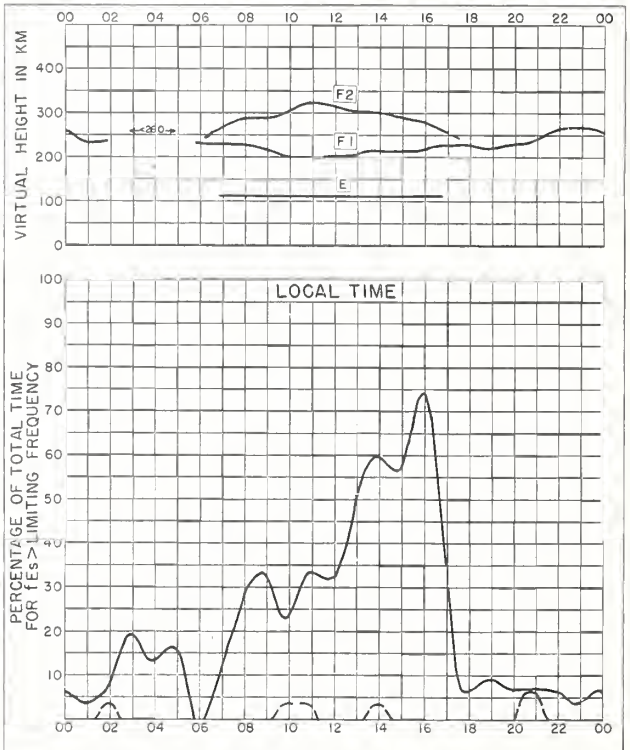


Fig 79 JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E OCTOBER 1954



OCTOBER 1954
Fig 80. JOHANNESBURG, UNION OF S. AFRICA

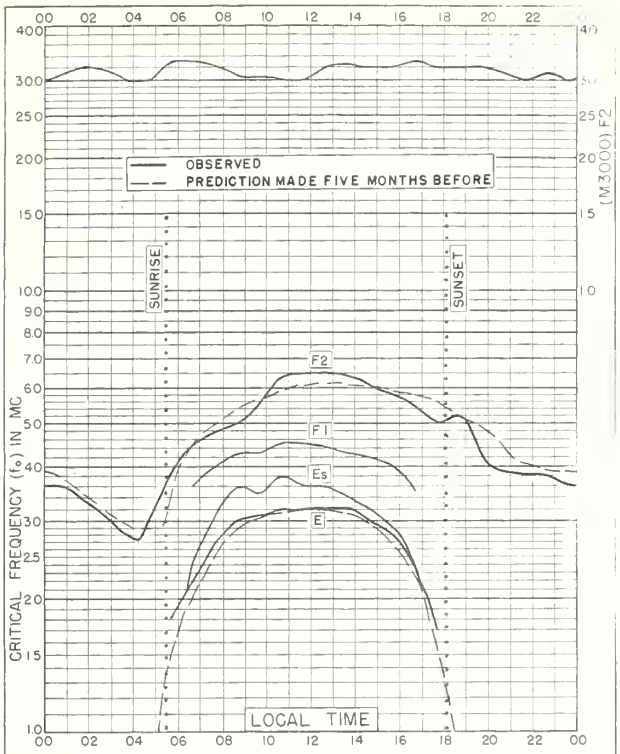
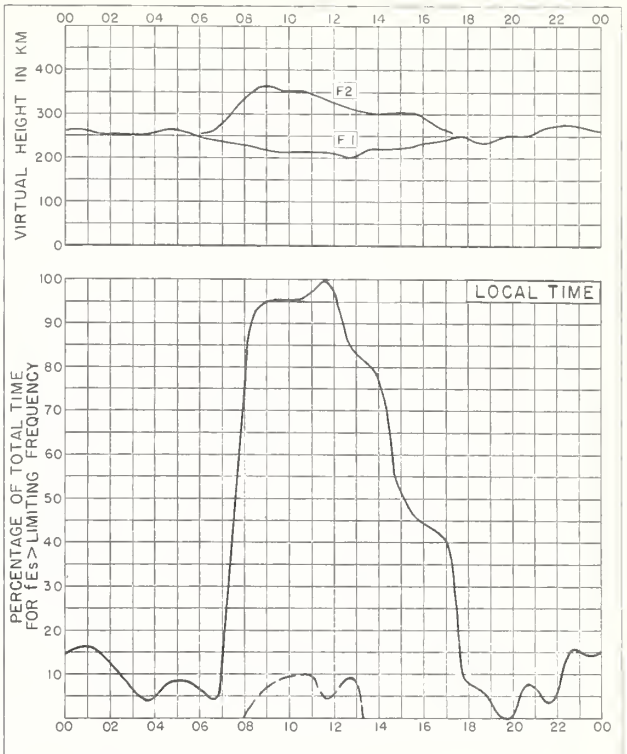


Fig. 81. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E OCTOBER 1954



OCTOBER 1954
Fig. 82. WATHEROO, W. AUSTRALIA

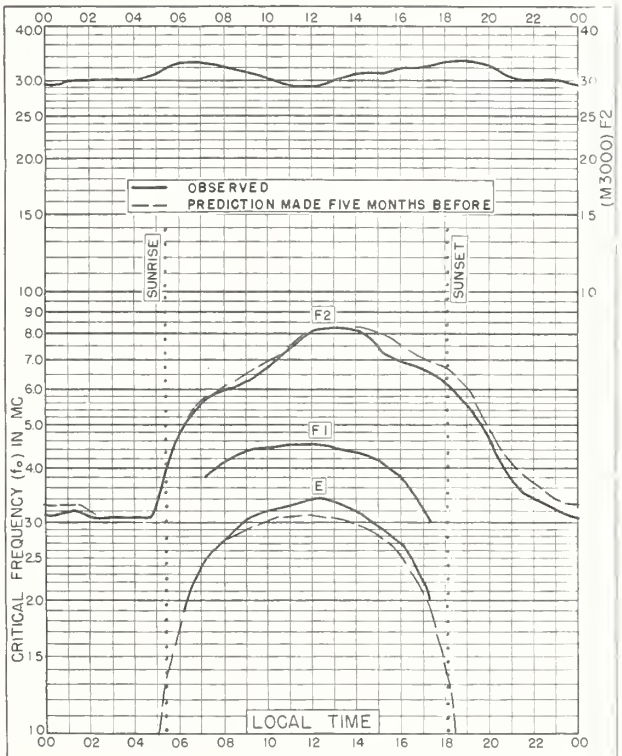
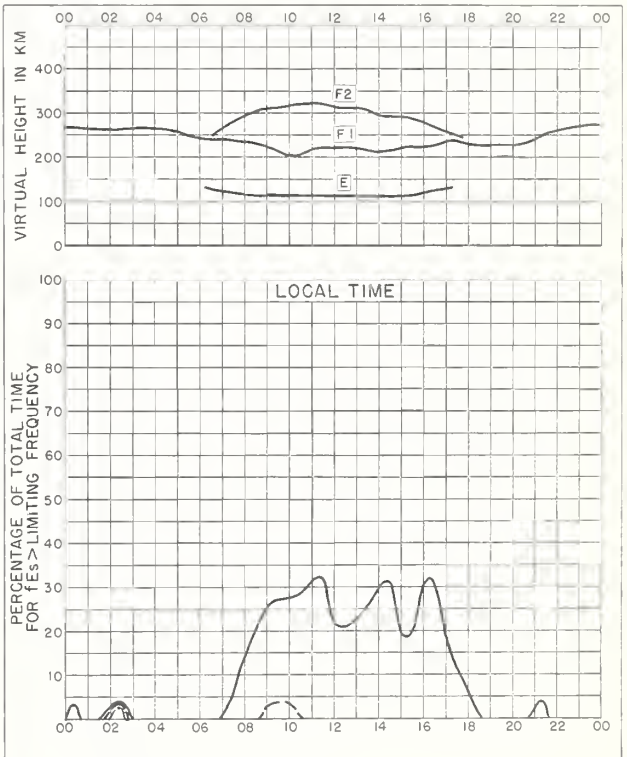


Fig. 83. CAPE TOWN, UNION OF S. AFRICA
34.2°S, 18.3°E OCTOBER 1954



OCTOBER 1954
Fig. 84. CAPE TOWN, UNION OF S. AFRICA

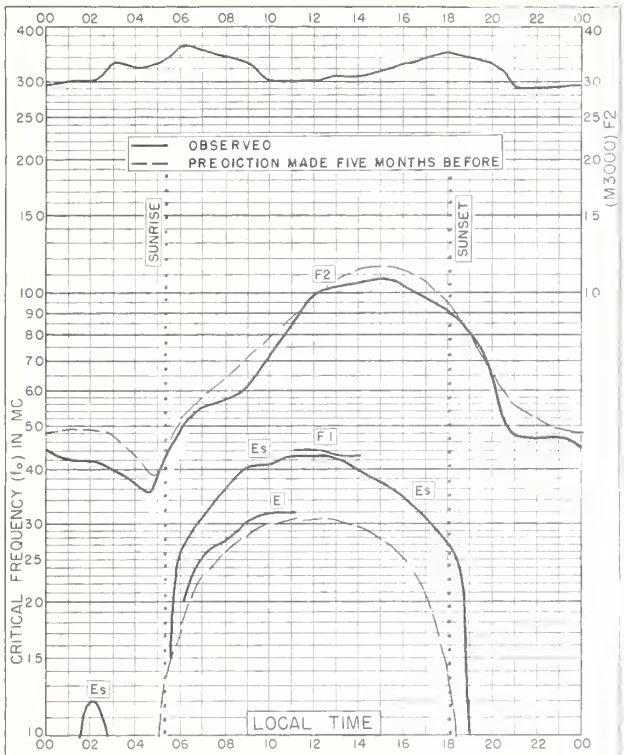
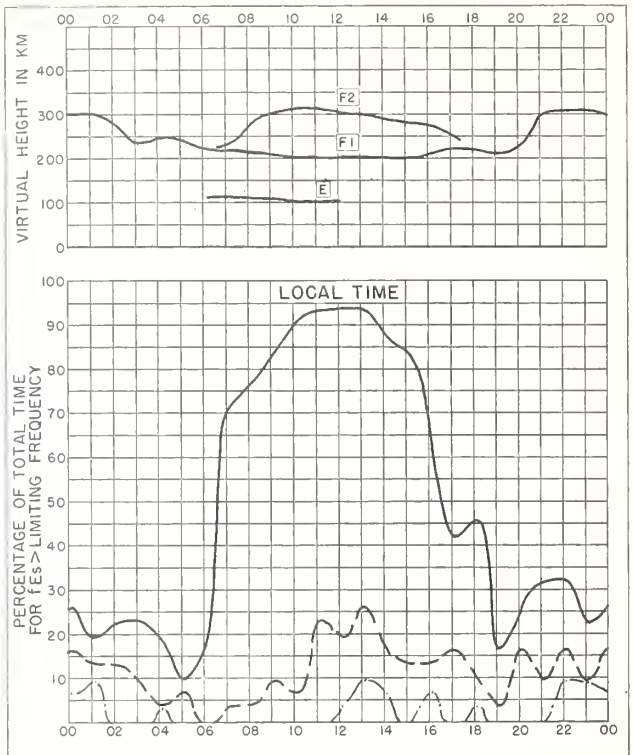


Fig. 85. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W OCTOBER 1954



OCTOBER 1954

Fig. 86. BUENOS AIRES, ARGENTINA

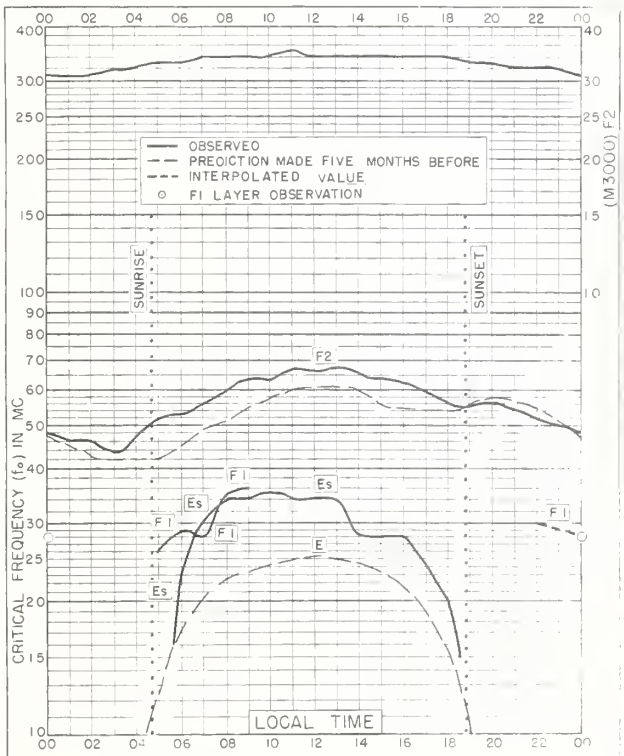
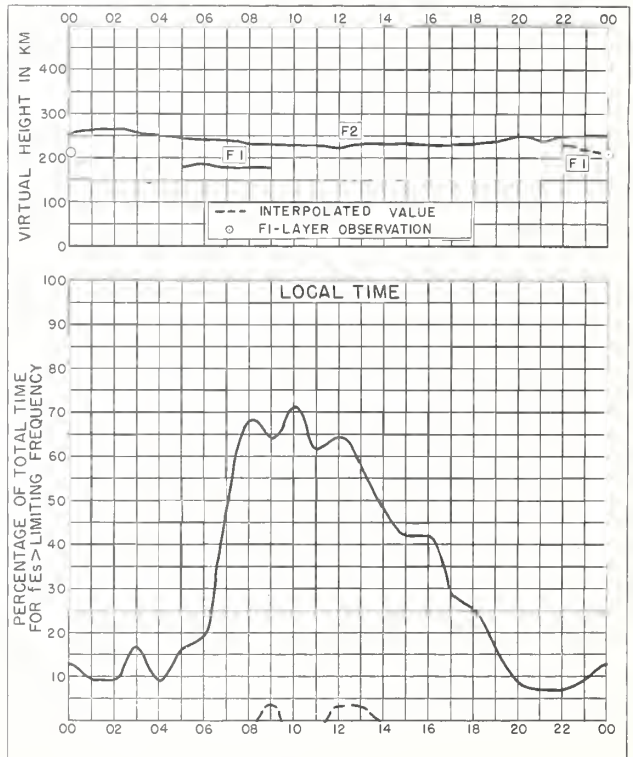


Fig. 87. DECEPCION I.
63.0°S, 60.7°W OCTOBER 1954



OCTOBER 1954

Fig. 88. DECEPCION I.

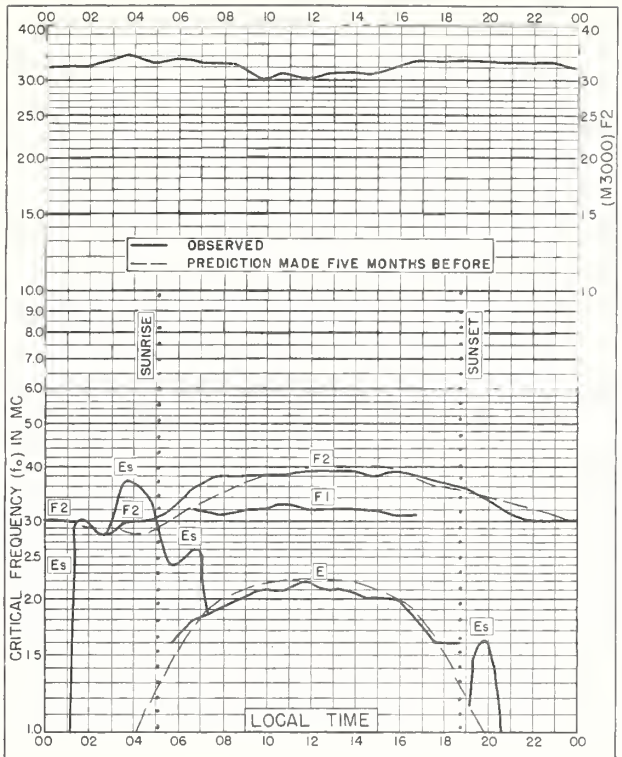


Fig. 89. RESOLUTE BAY, CANADA
74.7°N, 94.9°W SEPTEMBER 1954

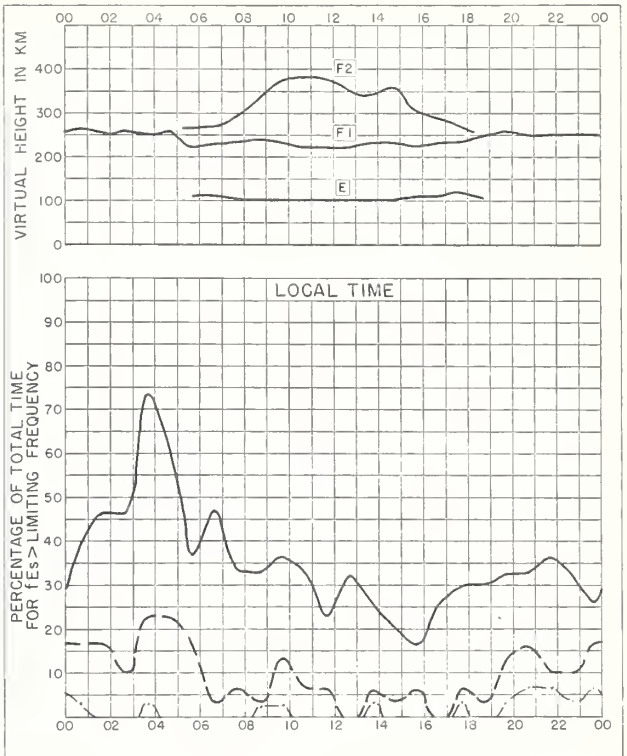


Fig. 90. RESOLUTE BAY, CANADA SEPTEMBER 1954

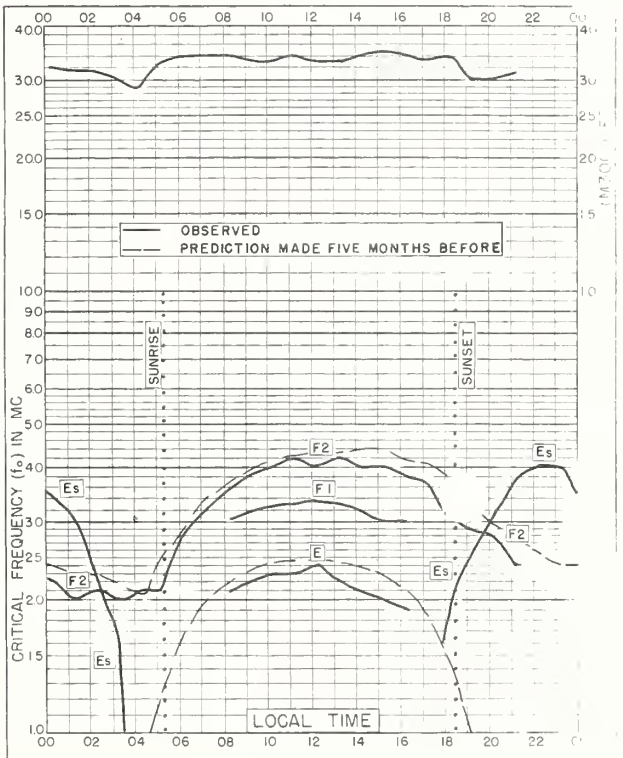


Fig. 91. KIRUNA, SWEDEN
67.8°N, 20.3°E SEPTEMBER 1954

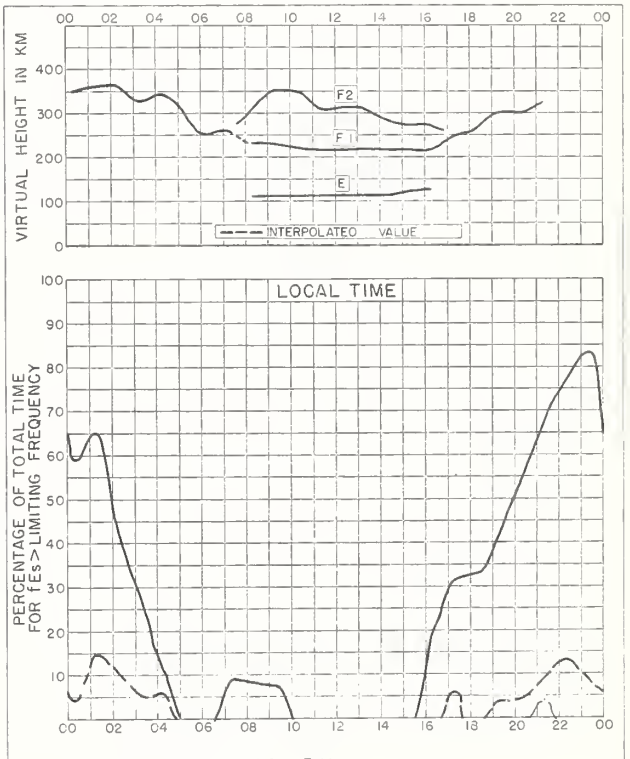


Fig. 92. KIRUNA, SWEDEN SEPTEMBER 1954

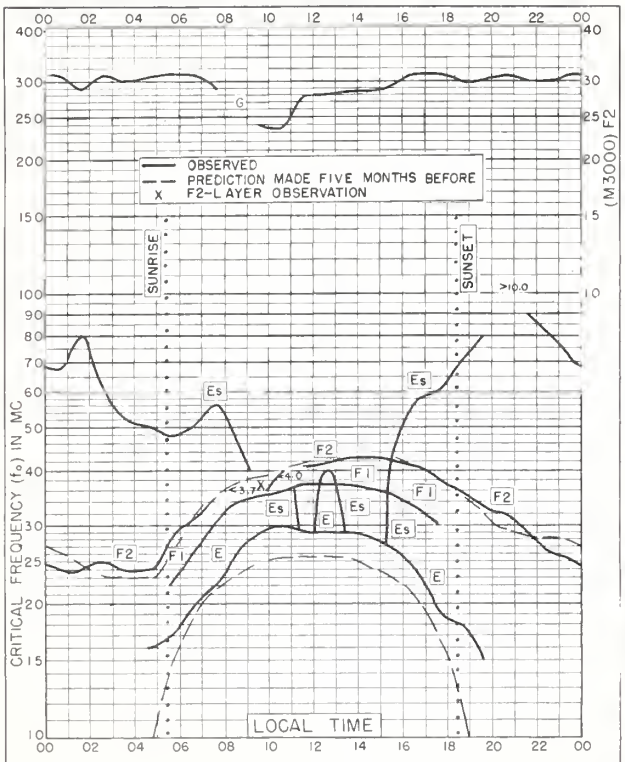


Fig 93. BAKER LAKE, CANADA
64.3°N, 96.0°W SEPTEMBER 1954

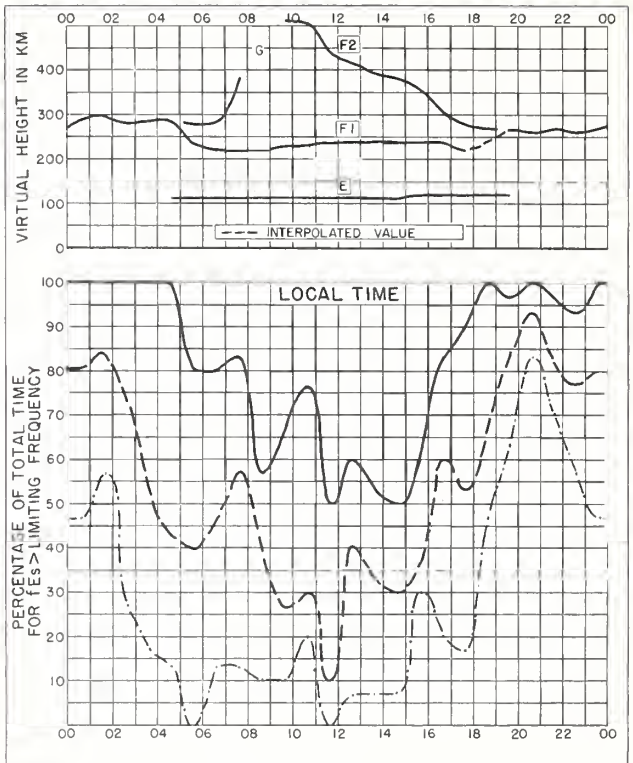


Fig 94. BAKER LAKE, CANADA SEPTEMBER 1954

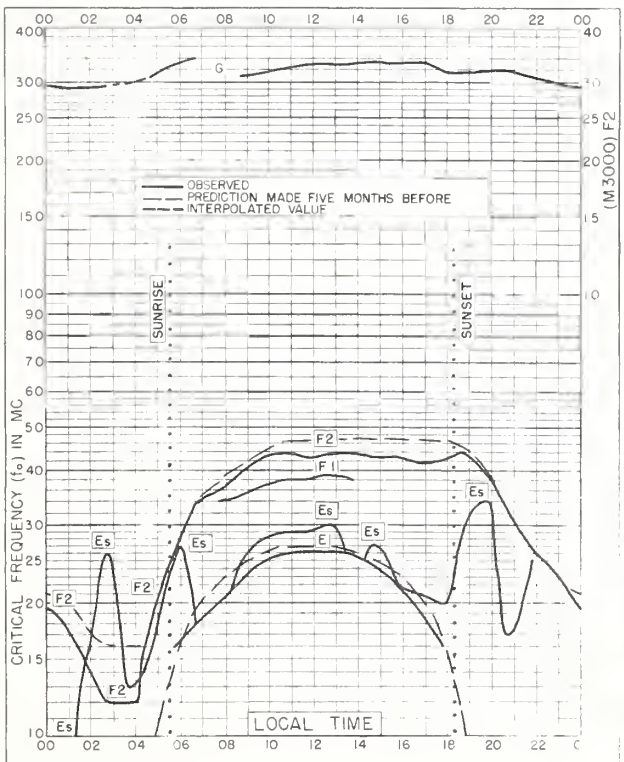


Fig 95. OSLO, NORWAY
60.0°N, 11.1°E SEPTEMBER 1954

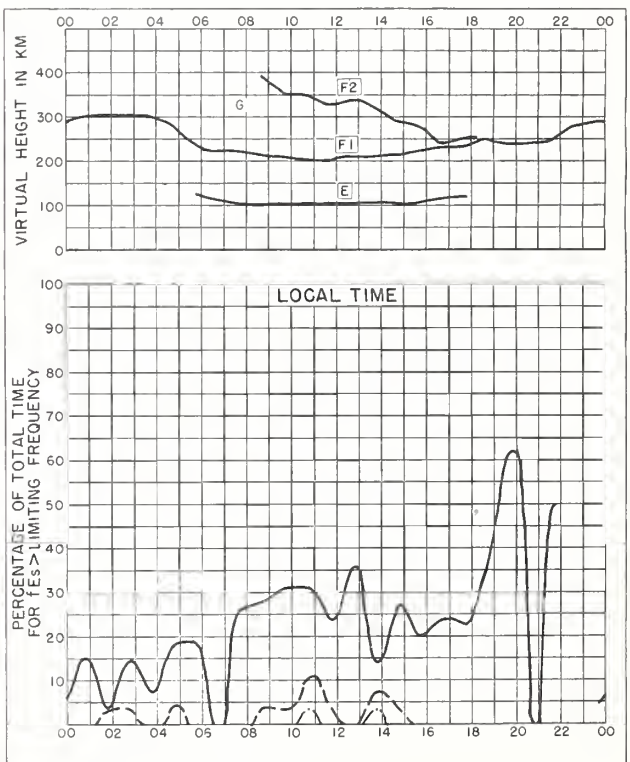


Fig 96. OSLO, NORWAY SEPTEMBER 1954

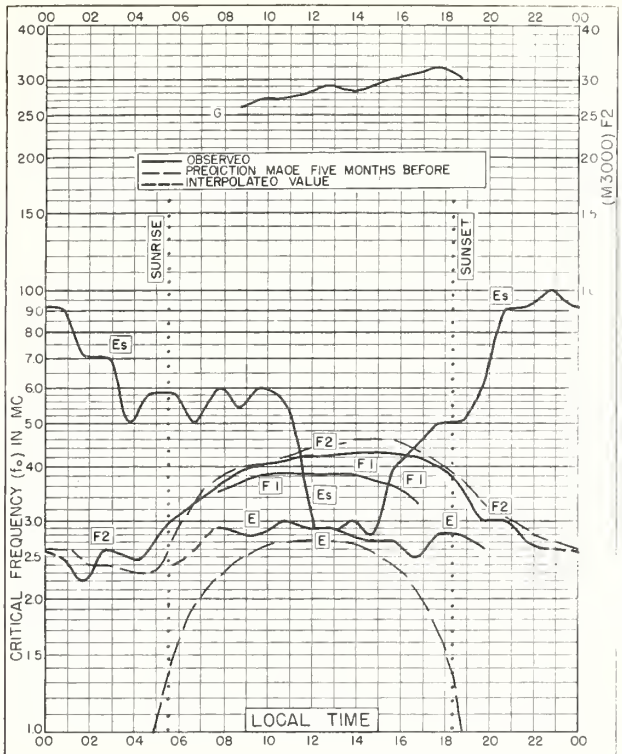


Fig. 97. CHURCHILL, CANADA
58.8°N, 94.2°W SEPTEMBER 1954

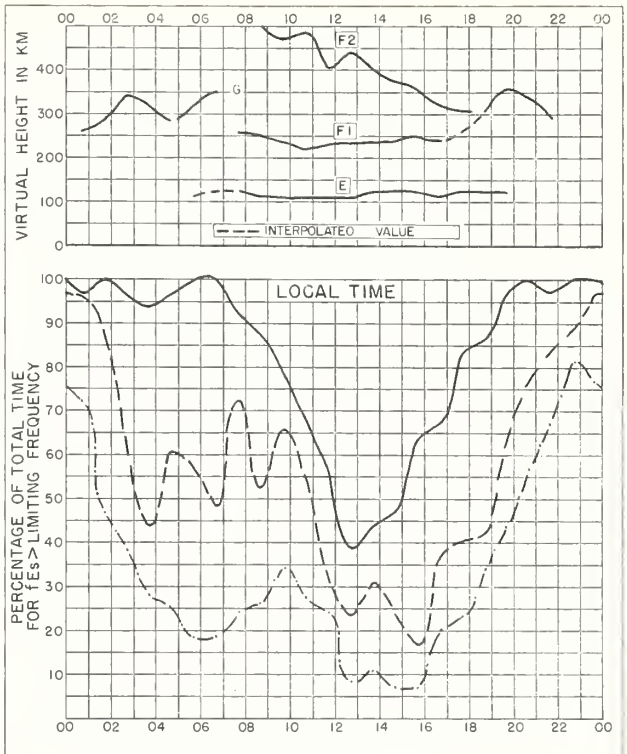


Fig. 98. CHURCHILL, CANADA SEPTEMBER 1954

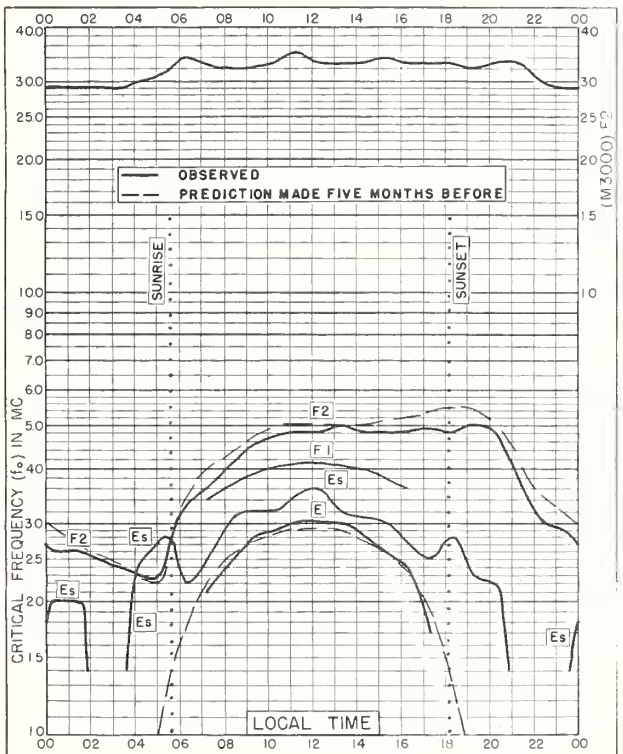


Fig. 99. De BILT, HOLLAND
52.1°N, 5.2°E SEPTEMBER 1954

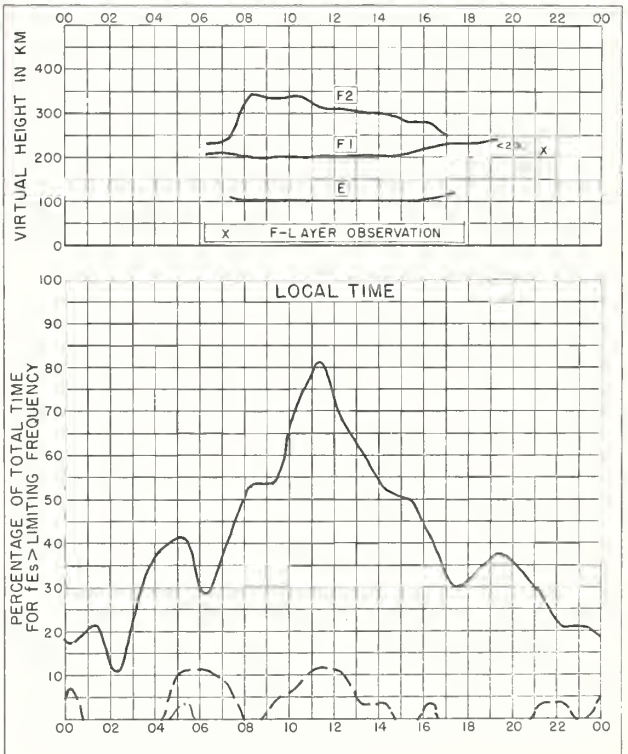


Fig 100. De BILT, HOLLAND SEPTEMBER 1954

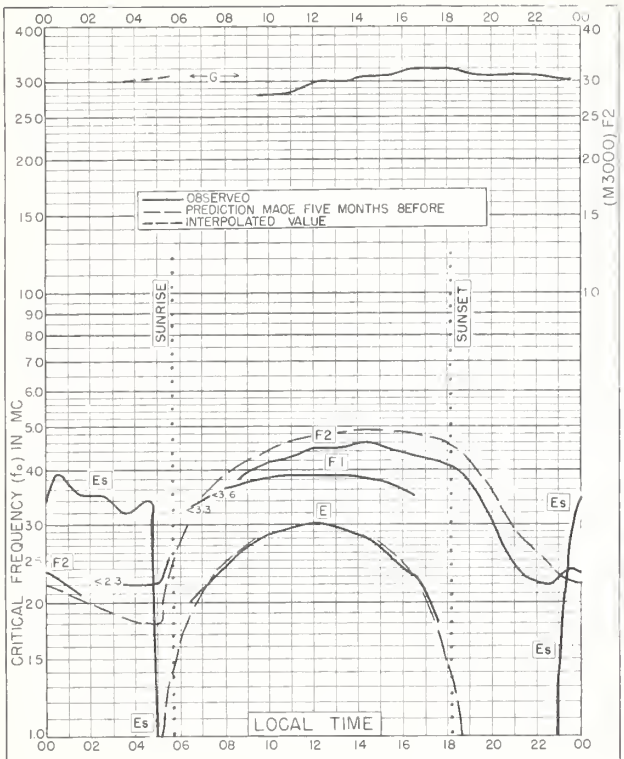


Fig. 101. WINNIPEG, CANADA
49.9°N, 97.4°W SEPTEMBER 1954

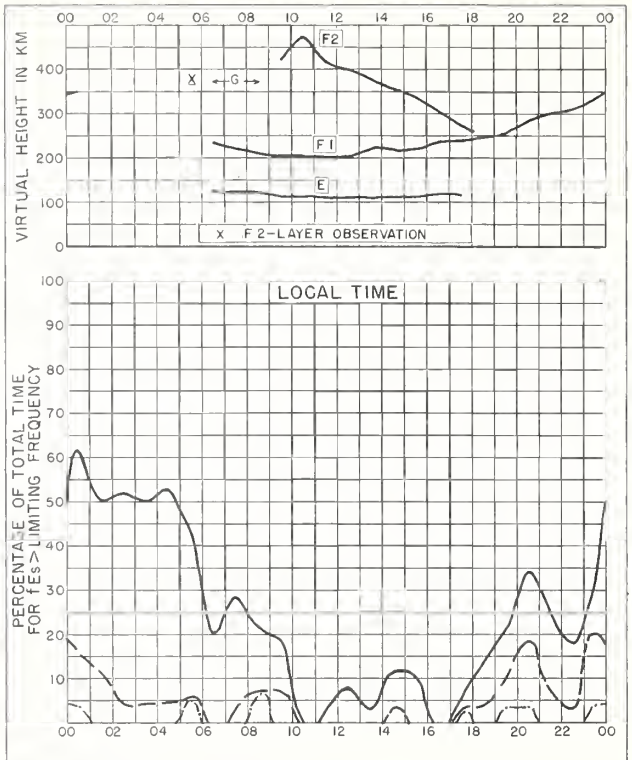


Fig. 102. WINNIPEG, CANADA SEPTEMBER 1954

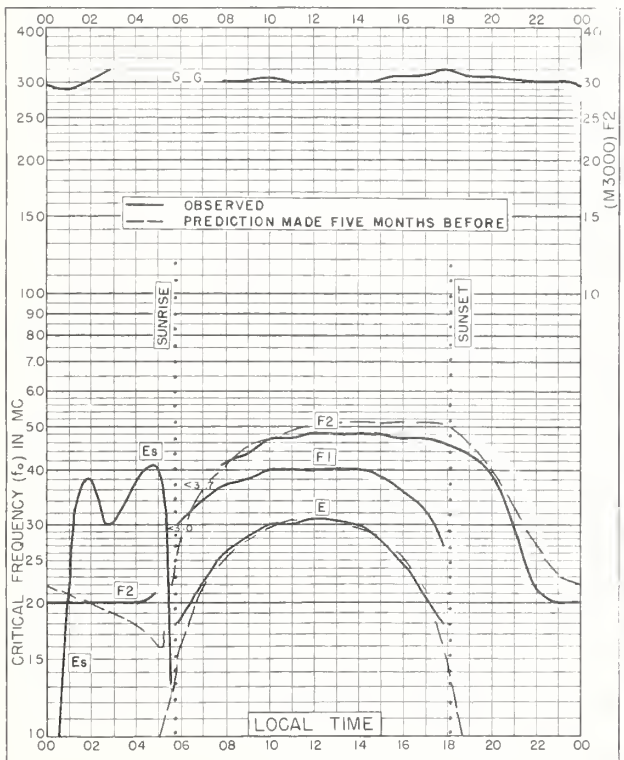


Fig. 103. OTTAWA, CANADA
45.4°N, 75.9°W SEPTEMBER 1954

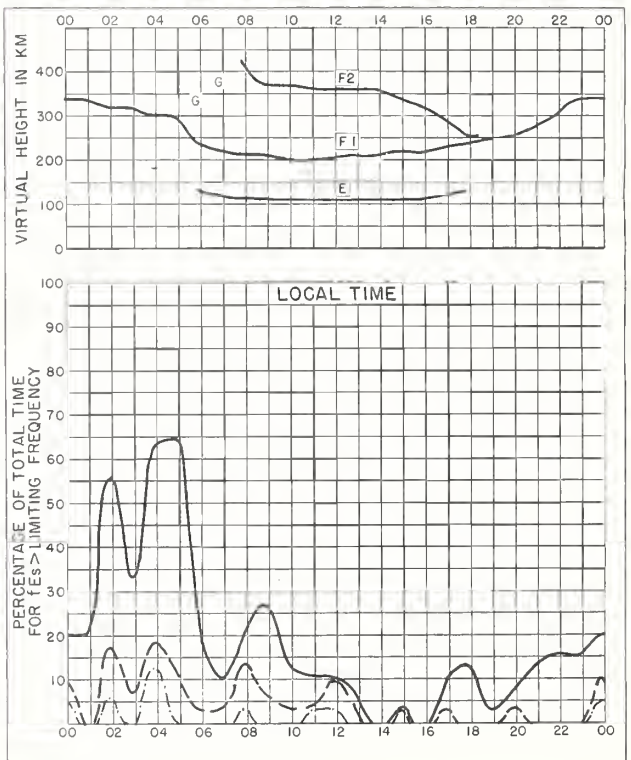


Fig. 104. OTTAWA, CANADA SEPTEMBER 1954

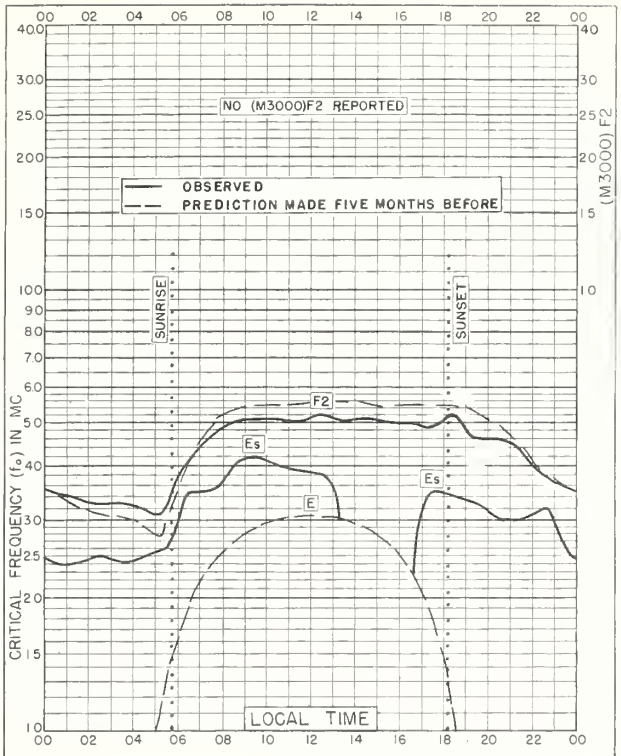


Fig. 105. WAKKANAI, JAPAN
45.4°N, 141.7°E. SEPTEMBER 1954

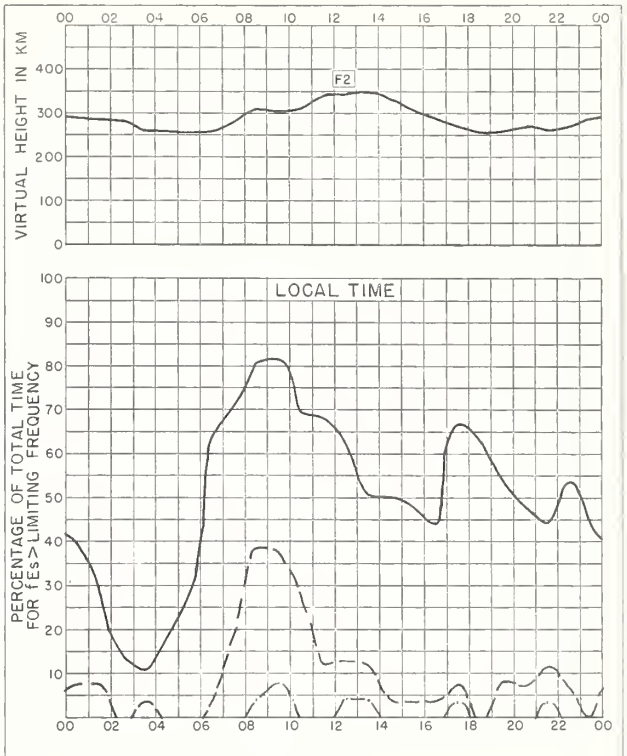


Fig. 106. WAKKANAI, JAPAN SEPTEMBER 1954

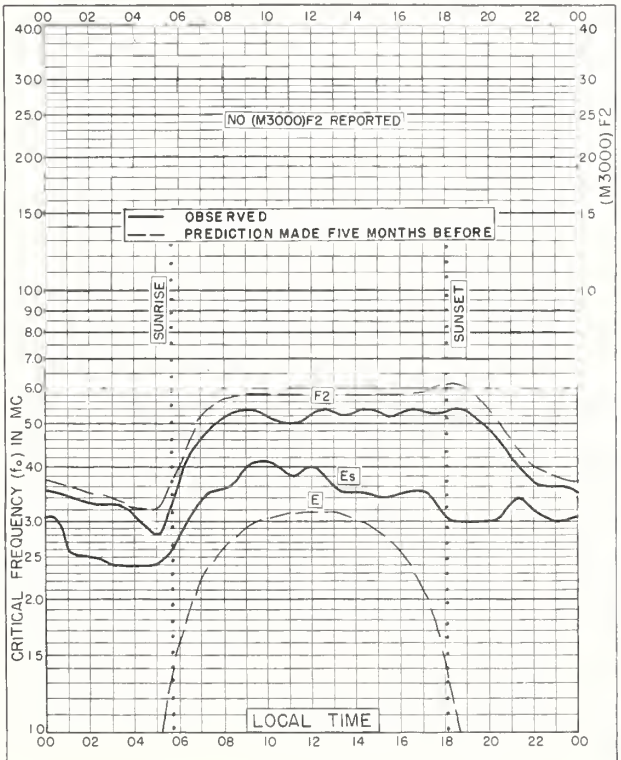


Fig. 107. AKITA, JAPAN
39.7°N, 140.1°E. SEPTEMBER 1954

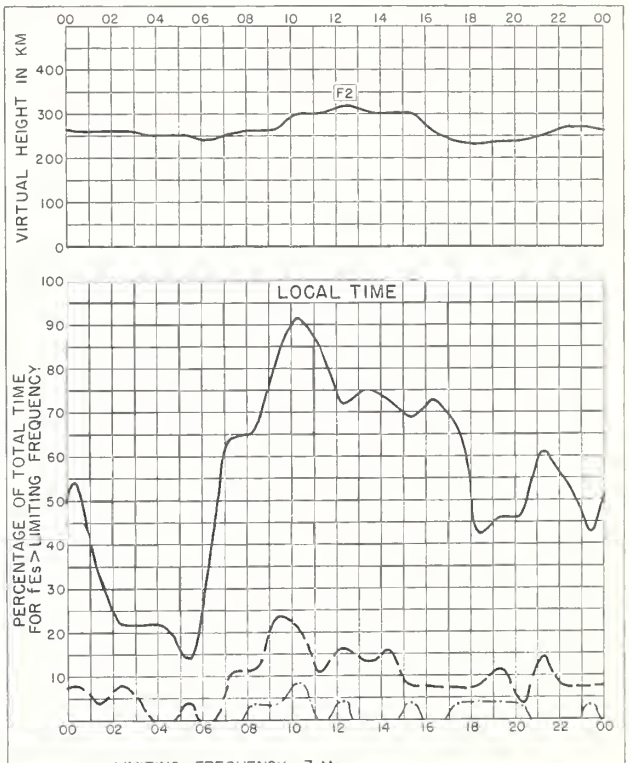


Fig. 108. AKITA, JAPAN SEPTEMBER 1954

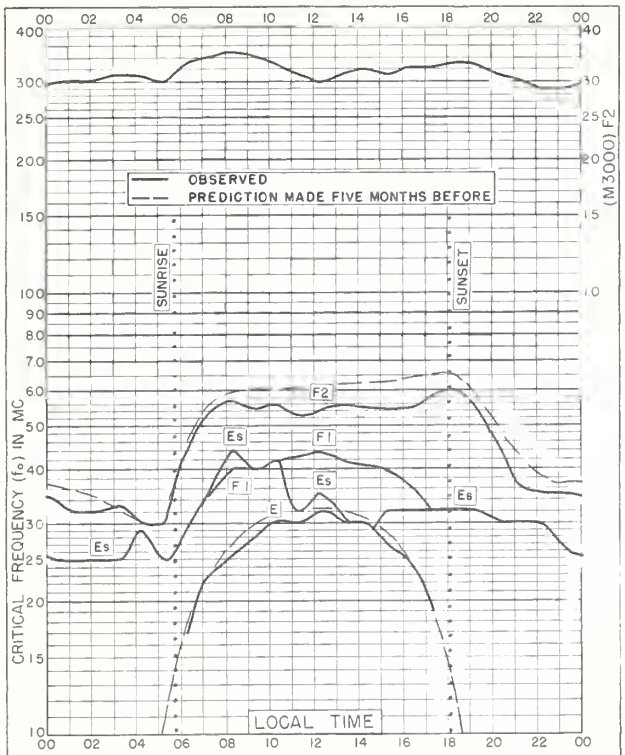


Fig 109. TOKYO, JAPAN
35.7°N, 139.5°E SEPTEMBER 1954

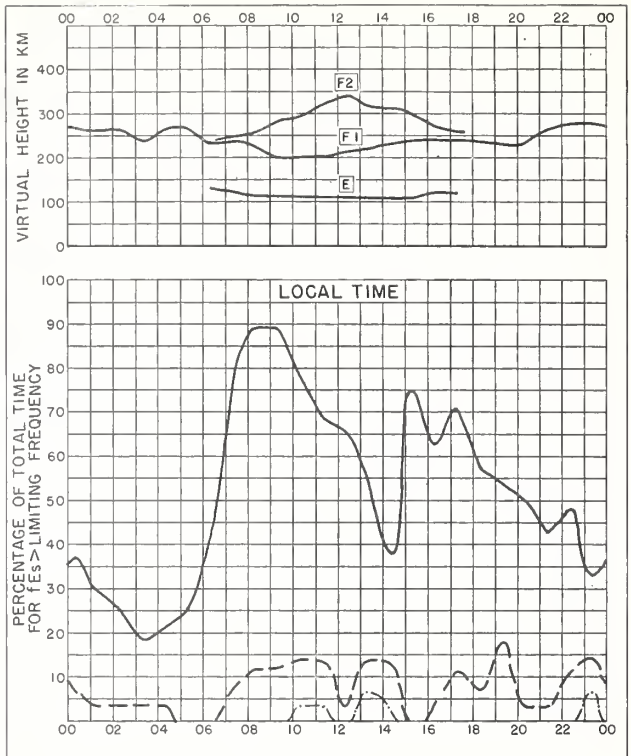


Fig. 110. TOKYO, JAPAN SEPTEMBER 1954

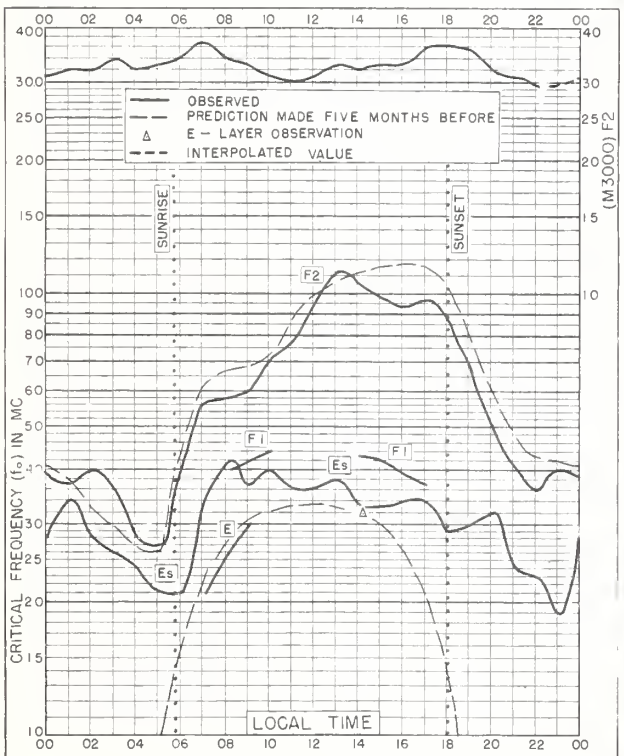


Fig 111. FORMOSA, CHINA
25.0°N, 121.5°E SEPTEMBER 1954

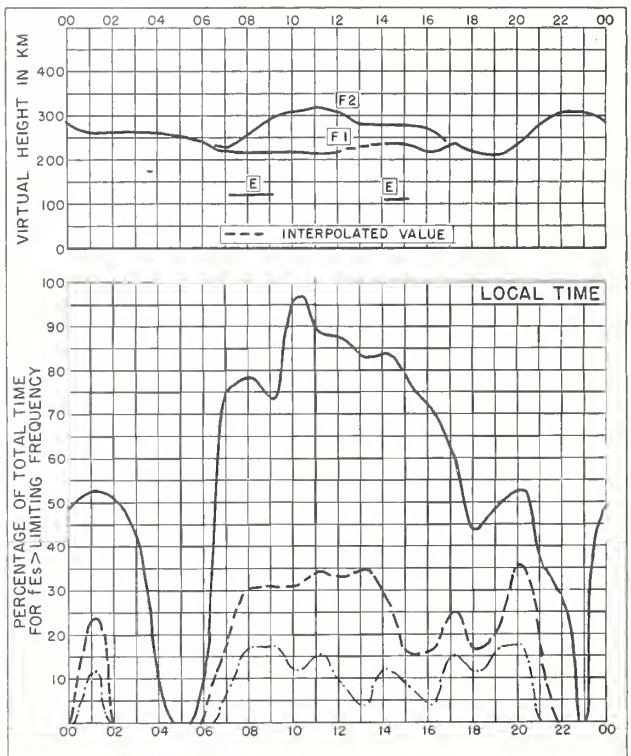


Fig 112. FORMOSA, CHINA SEPTEMBER 1954

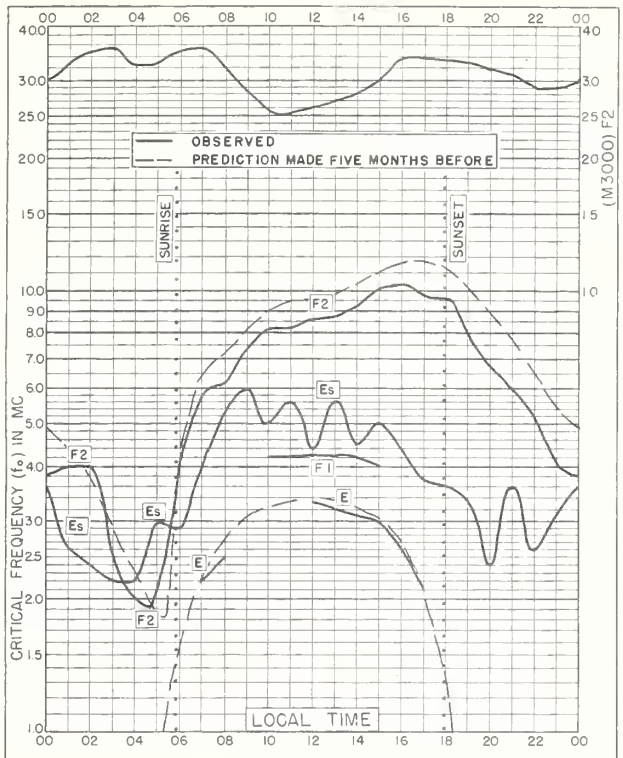


Fig. 113. BAGUIO, P.I.
16.4°N, 120.6°E SEPTEMBER 1954

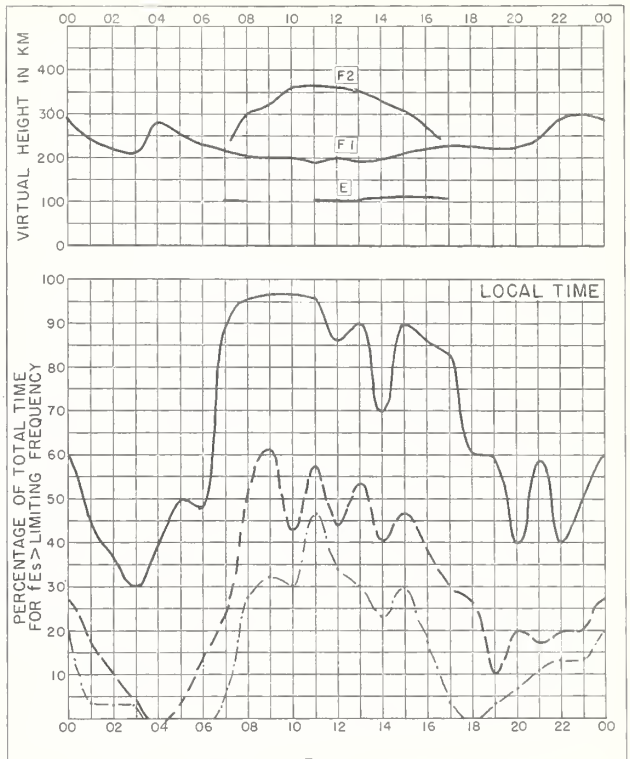


Fig 114. BAGUIO, P.I. SEPTEMBER 1954

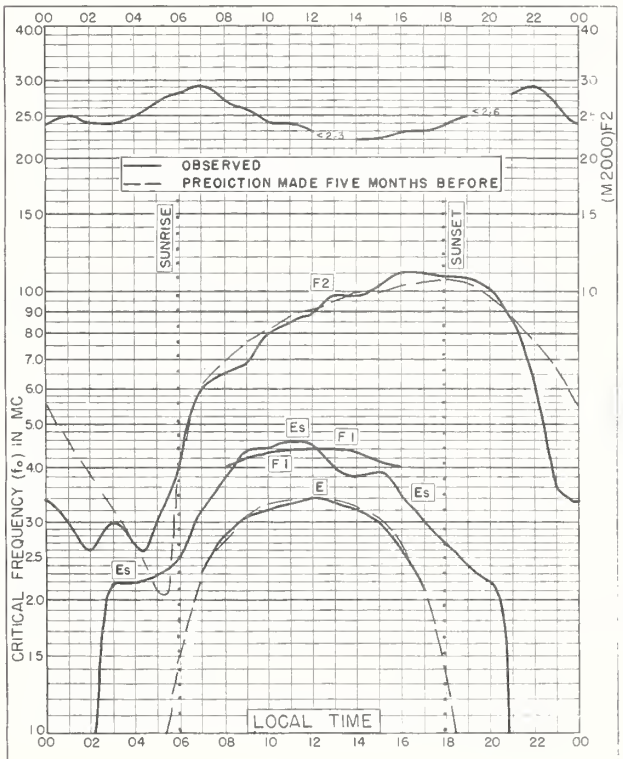


Fig. 115. LEOPOLDVILLE, BELGIAN CONGO
4.3°S, 15.3°E SEPTEMBER 1954

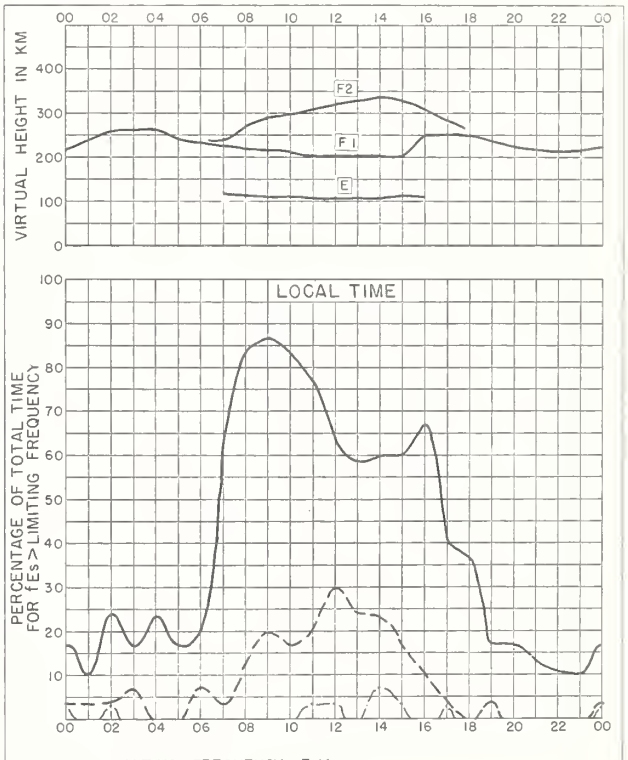


Fig. 116. LEOPOLDVILLE, BELGIAN CONGO SEPTEMBER 1954

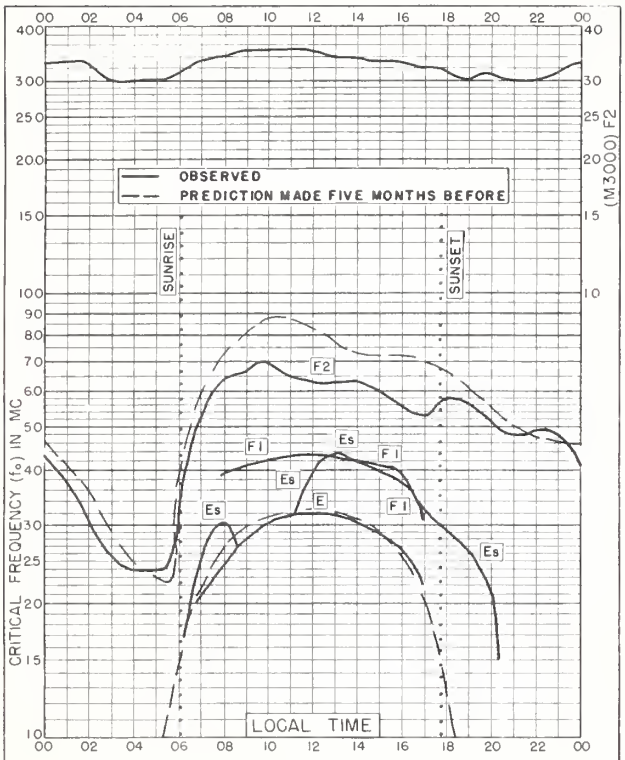


Fig 117. RAROTONGA I.
21.3° S, 159.8° W SEPTEMBER 1954

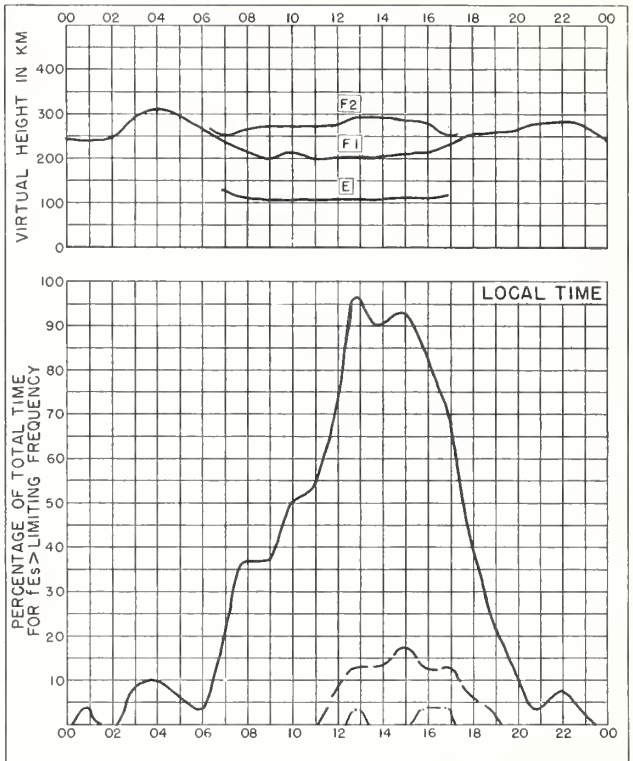


Fig. 118. RAROTONGA I. SEPTEMBER 1954

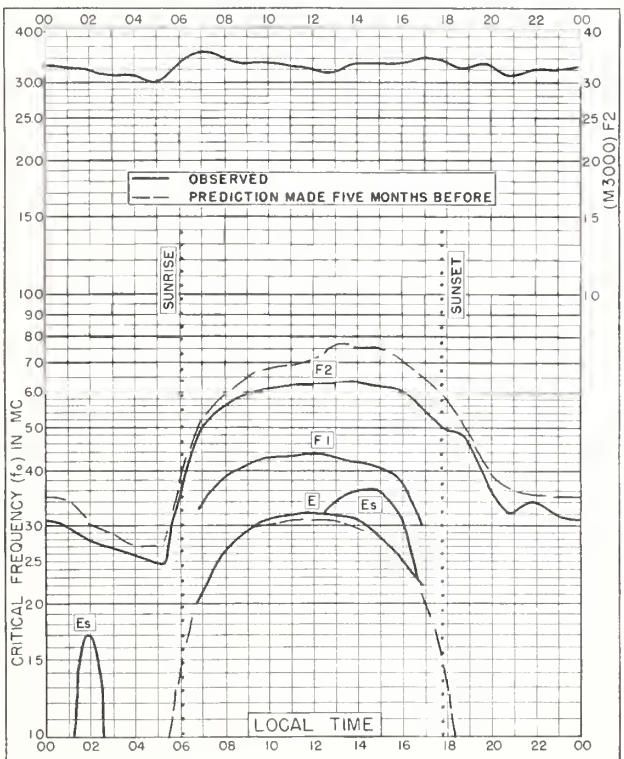


Fig 119. JOHANNESBURG, UNION OF S AFRICA
26.2°S, 28.1°E SEPTEMBER 1954

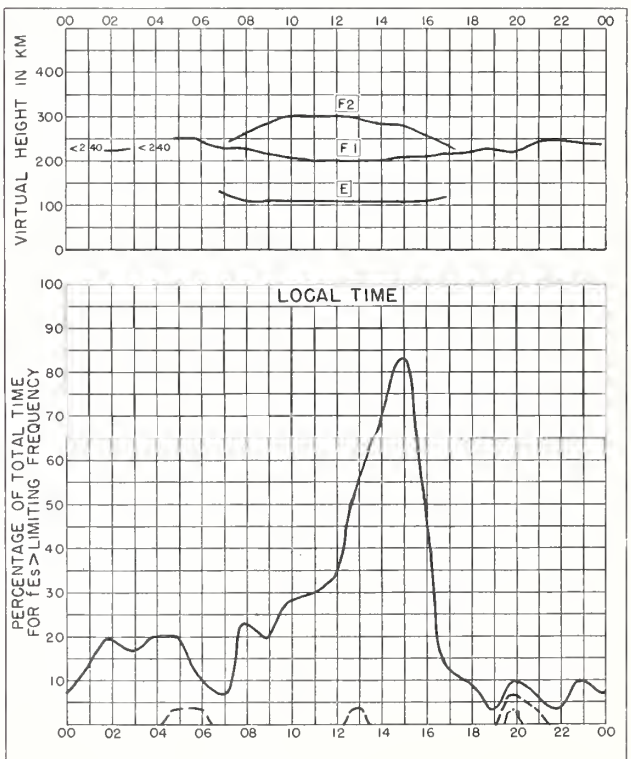


Fig. 120. JOHANNESBURG, UNION OF S. AFRICA SEPTEMBER 1954

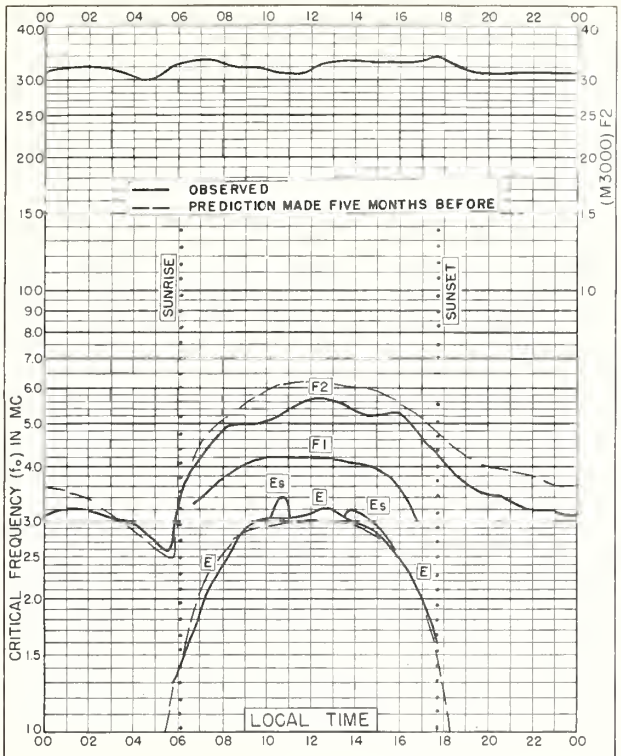


Fig. 121. WATHEROO, W AUSTRALIA
30.3°S, 115.9°E SEPTEMBER 1954

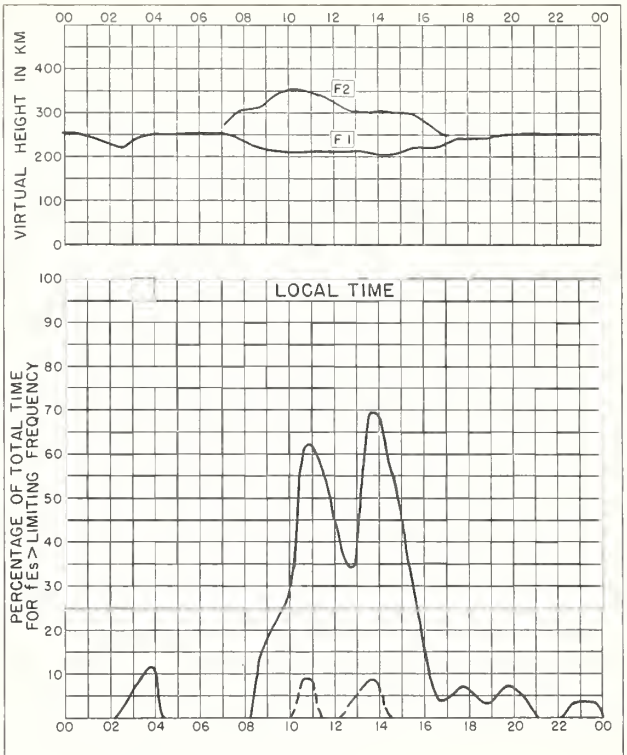


Fig. 122. WATHEROO, W. AUSTRALIA SEPTEMBER 1954

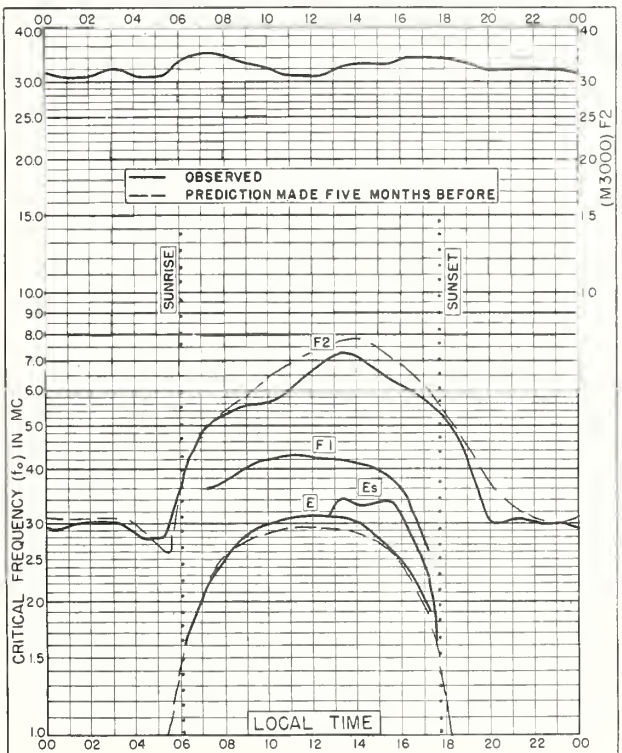


Fig. 123. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E SEPTEMBER 1954

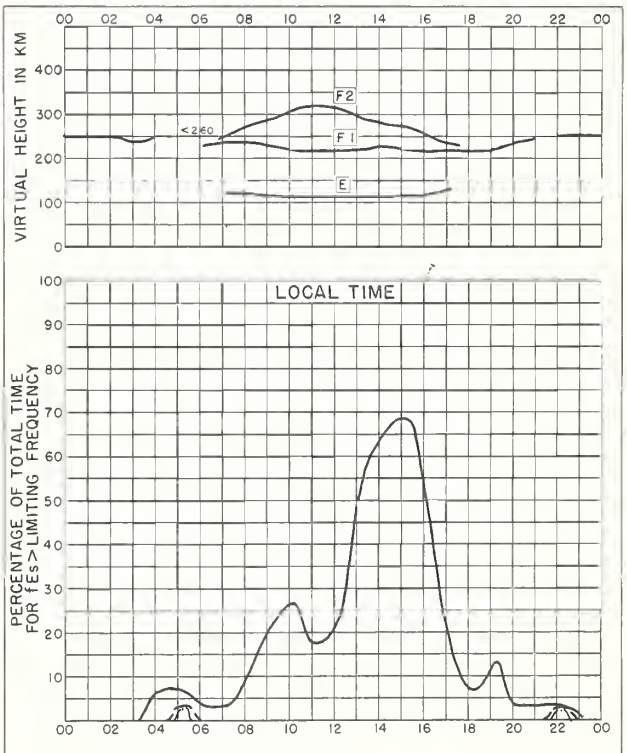


Fig. 124. CAPETOWN, UNION OF S. AFRICA SEPTEMBER 1954

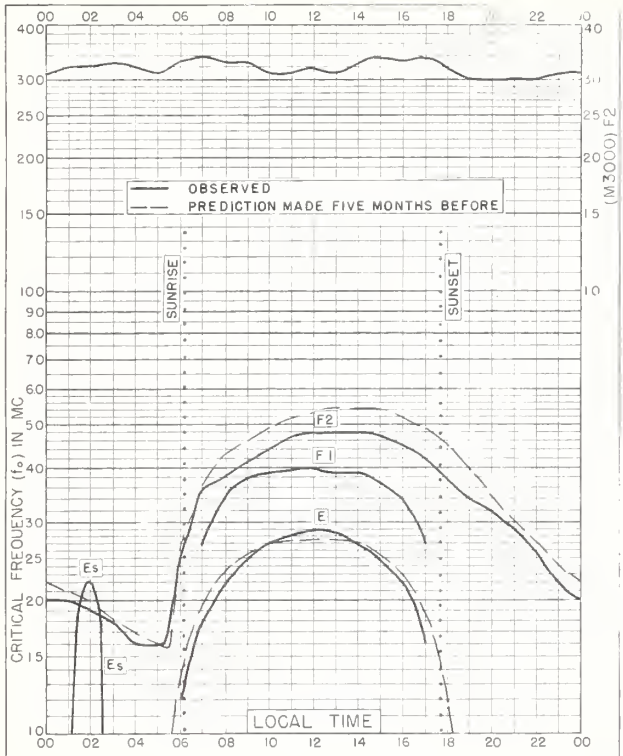


Fig 125. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E SEPTEMBER 1954

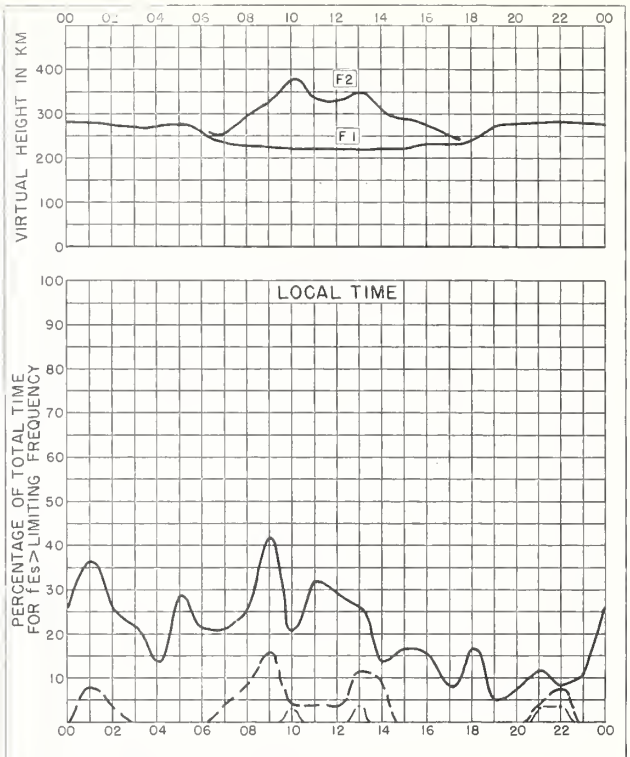


Fig. 126. CHRISTCHURCH, NEW ZEALAND SEPTEMBER 1954

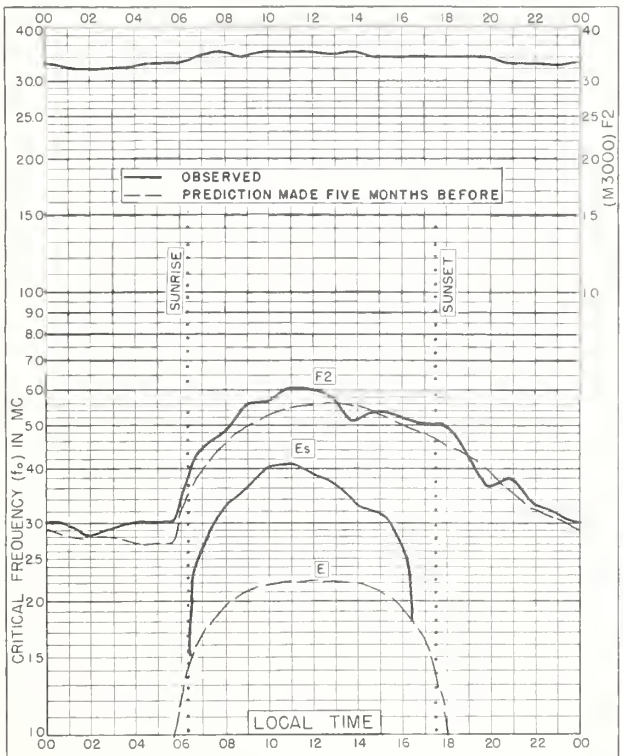


Fig 127. DECEPCION I
63.0°S, 60.7° W SEPTEMBER 1954

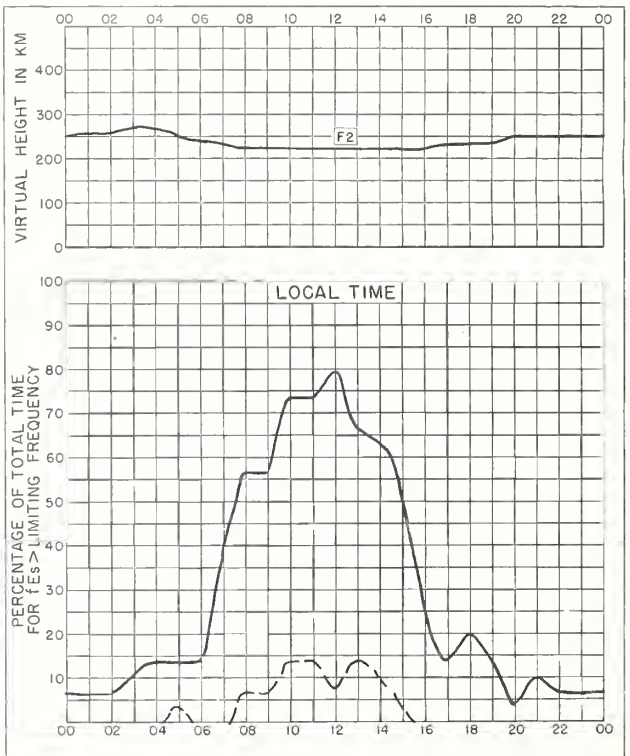


Fig 128. DECEPCION I. SEPTEMBER 1954

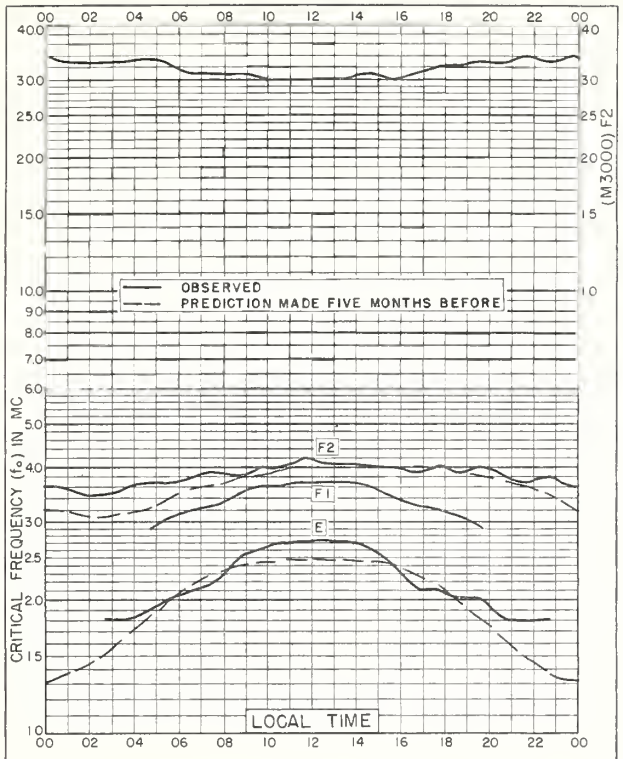


Fig. 129. RESOLUTE BAY, CANADA
74.7°N, 94.9°W AUGUST 1954

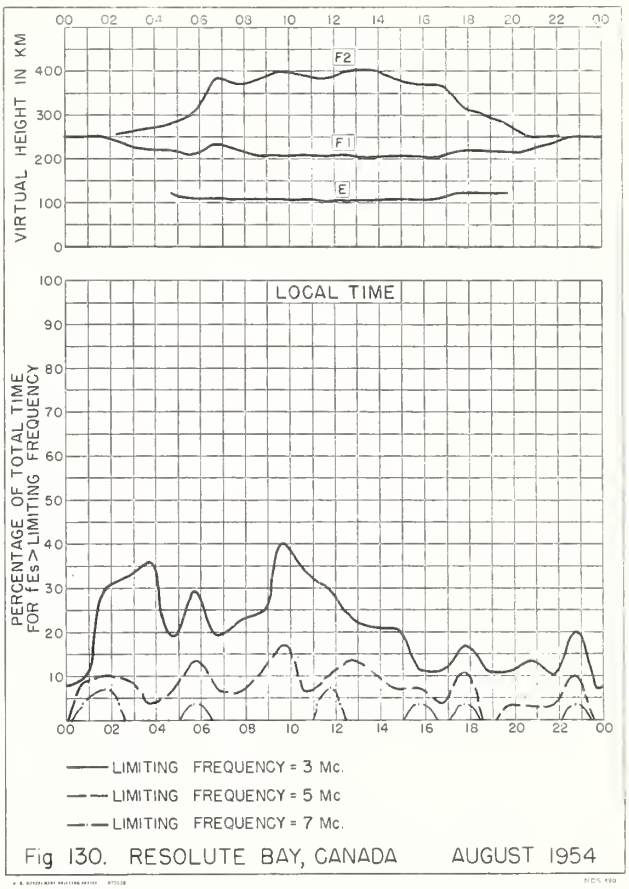


Fig 130. RESOLUTE BAY, CANADA AUGUST 1954

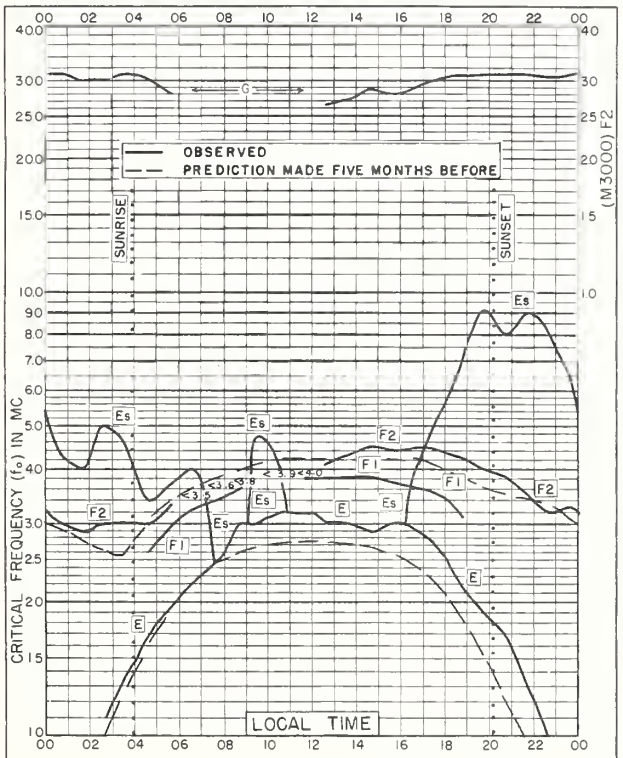


Fig 131. BAKER LAKE, CANADA
64.3°N, 96.0°W AUGUST 1954

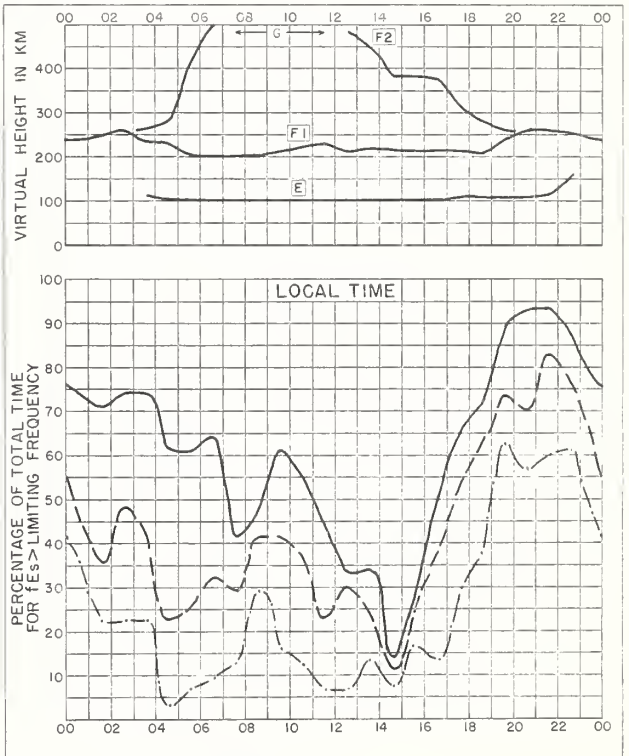


Fig. 132. BAKER LAKE, CANADA AUGUST 1954

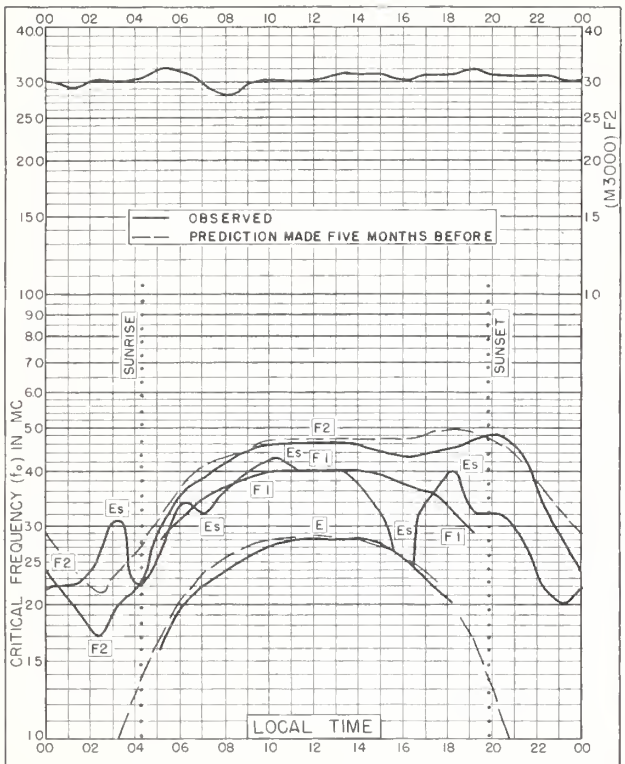


Fig. 133. UPSULA, SWEDEN
598°N, 176°E AUGUST 1954

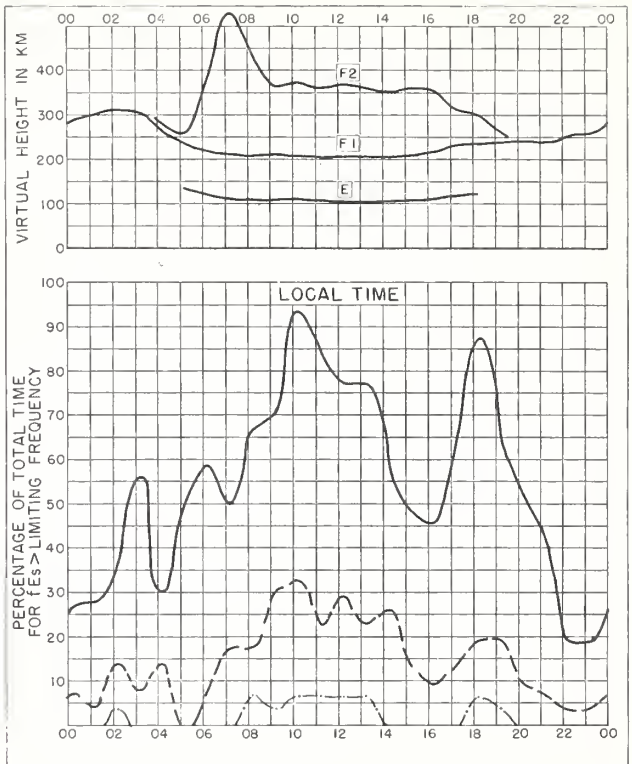


Fig. 134. UPSULA, SWEDEN AUGUST 1954

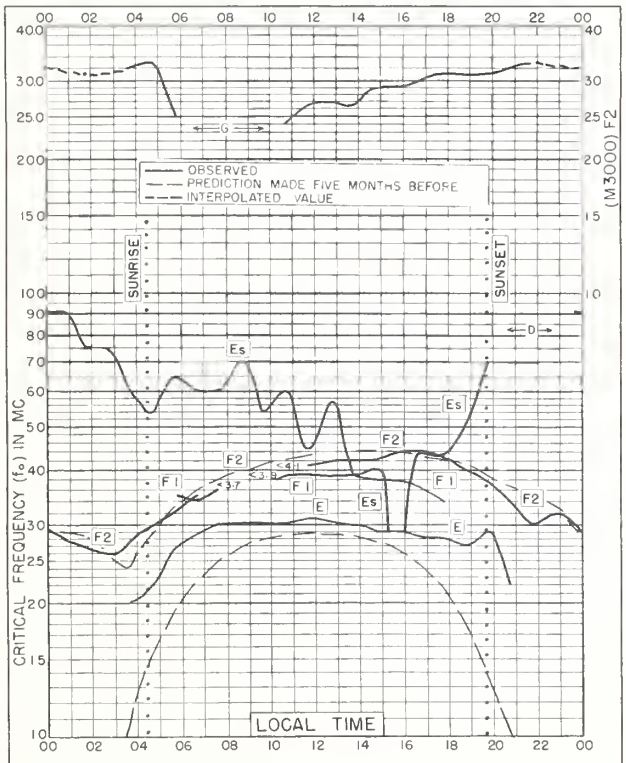


Fig 135. CHURCHILL, CANADA
588°N, 94.2°W AUGUST 1954

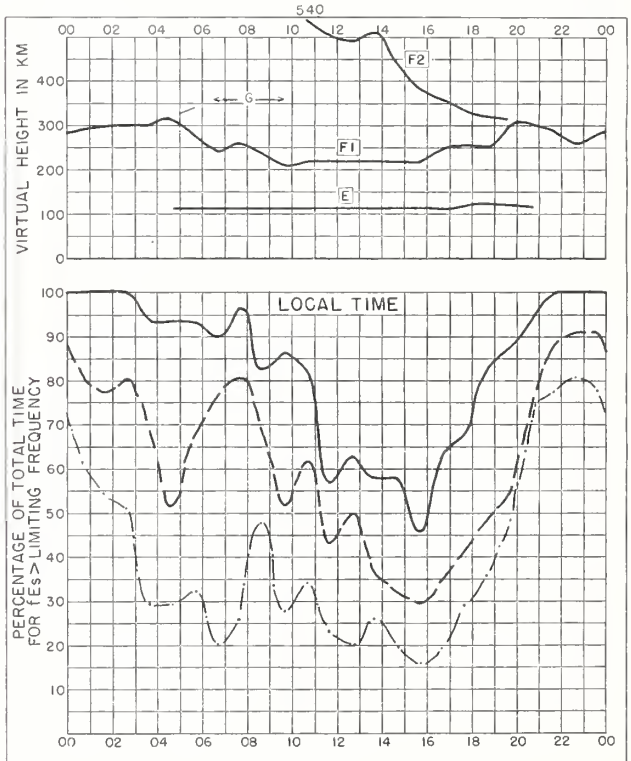


Fig. 136. CHURCHILL, CANADA AUGUST 1954

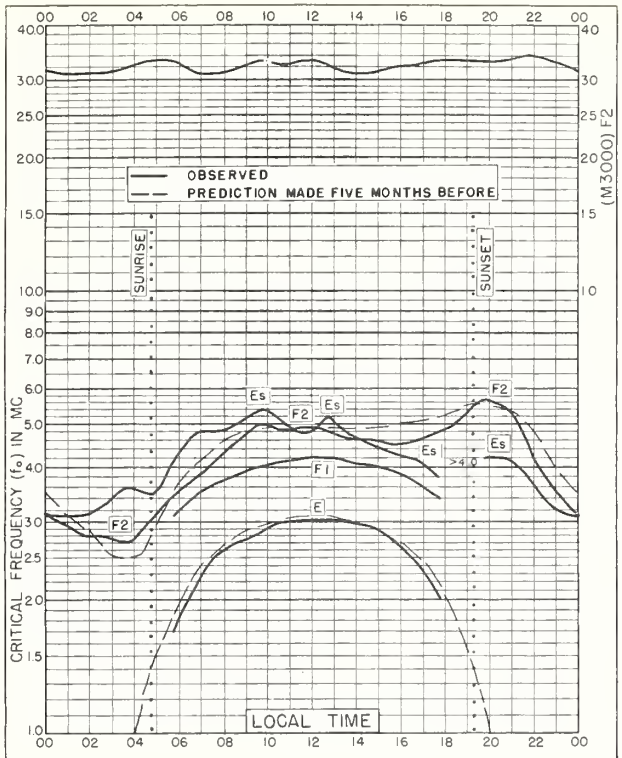


Fig 137. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E AUGUST 1954

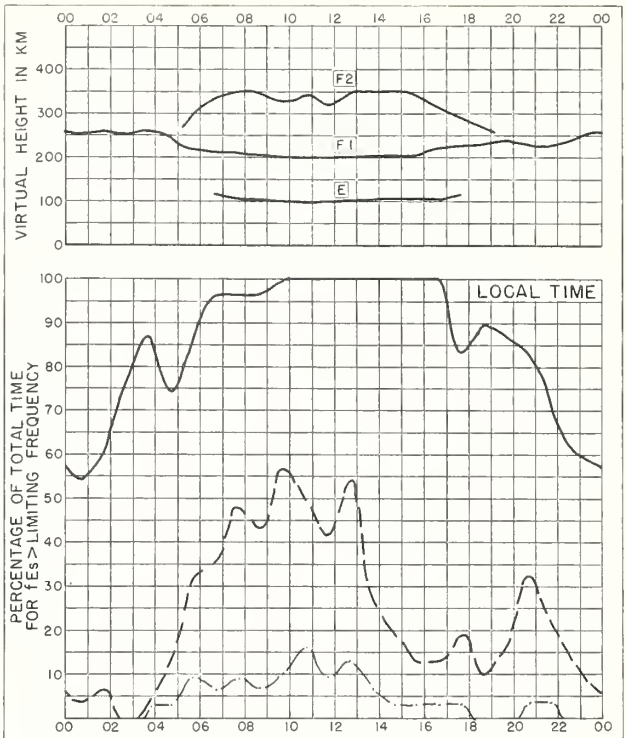


Fig 138. LINDAU/HARZ, GERMANY AUGUST 1954

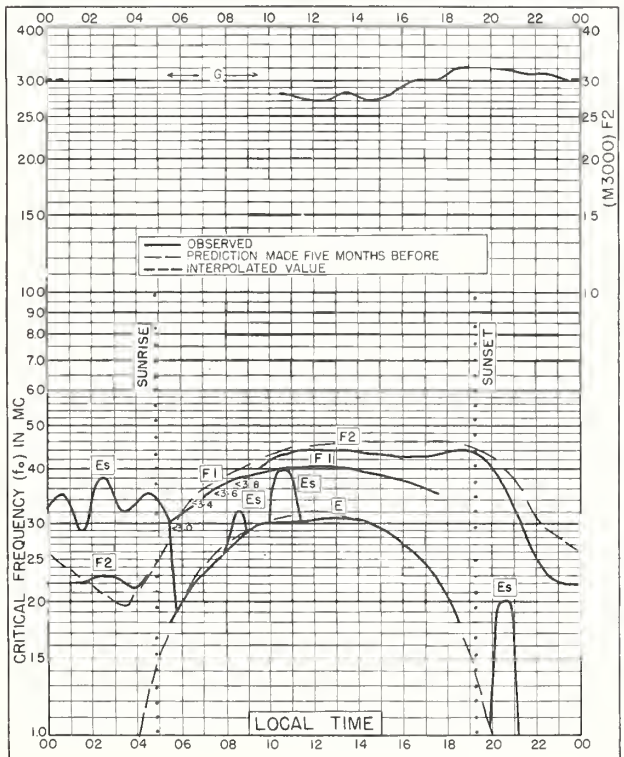


Fig. 139. WINNIPEG, CANADA
49.9°N, 97.4° W AUGUST 1954

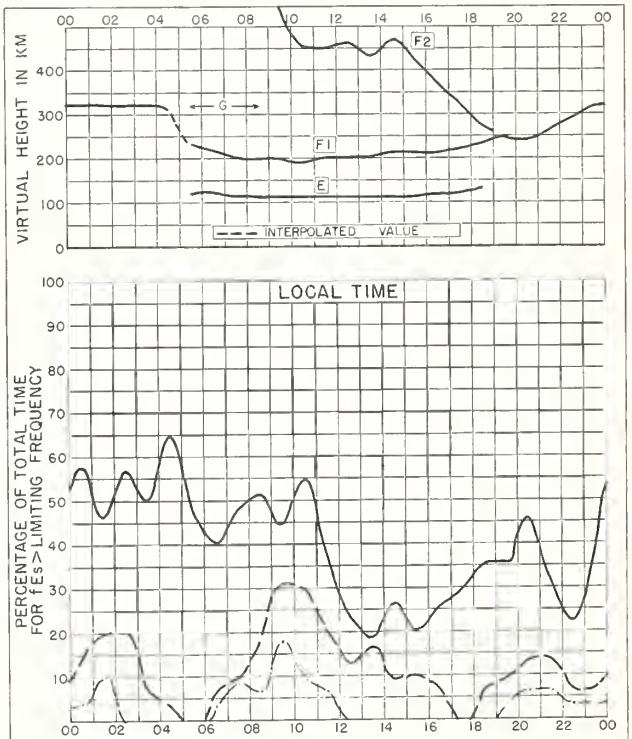


Fig 140. WINNIPEG, CANADA AUGUST 1954

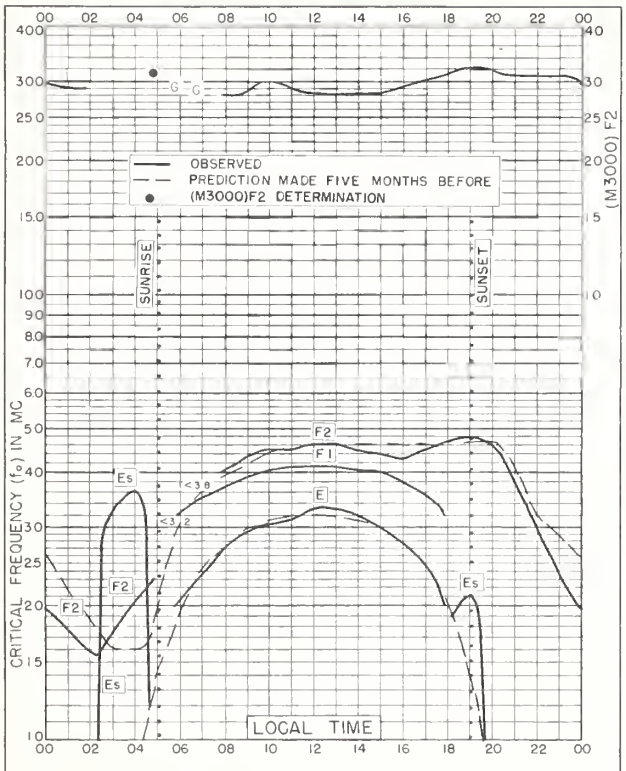


Fig. 141. OTTAWA, CANADA
45.4° N, 75.9° W AUGUST 1954

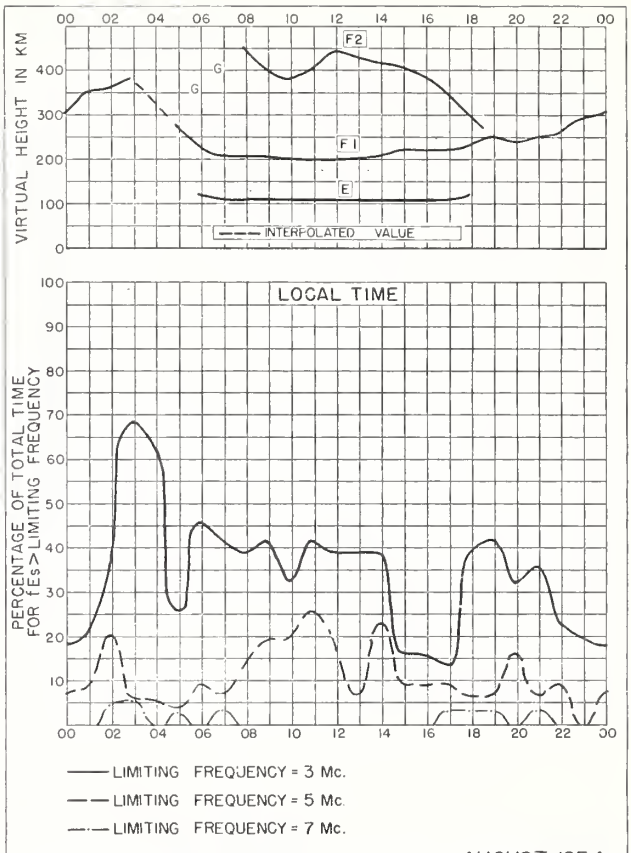


Fig. 142. OTTAWA, CANADA AUGUST 1954

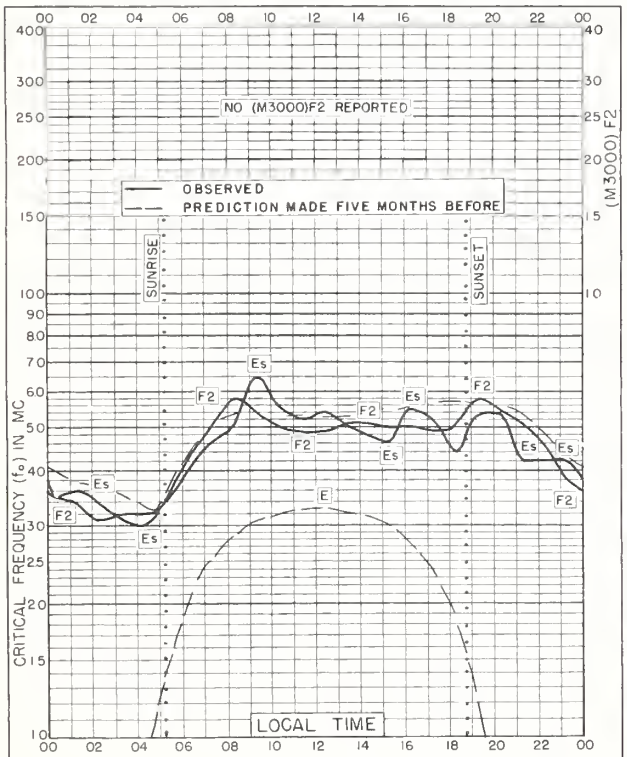


Fig. 143. AKITA, JAPAN
39.7° N, 140.1° E AUGUST 1954

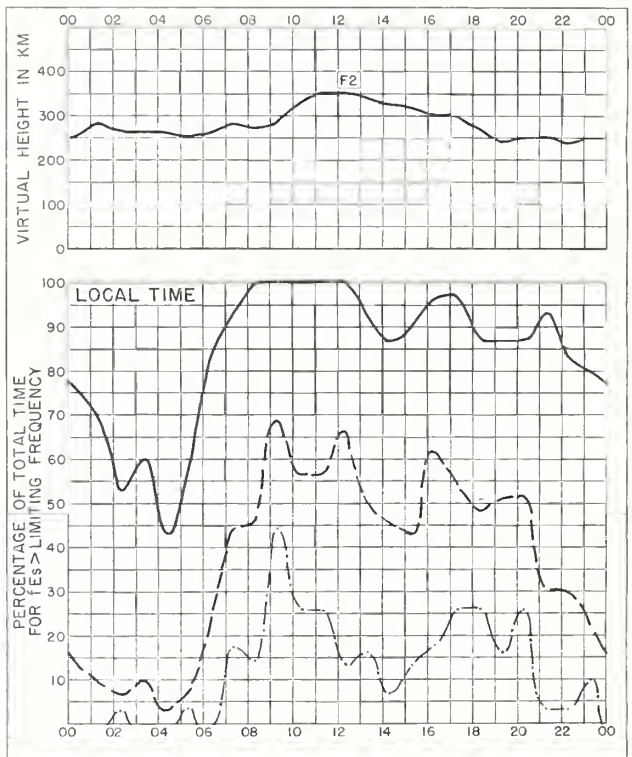


Fig 144. AKITA, JAPAN AUGUST 1954

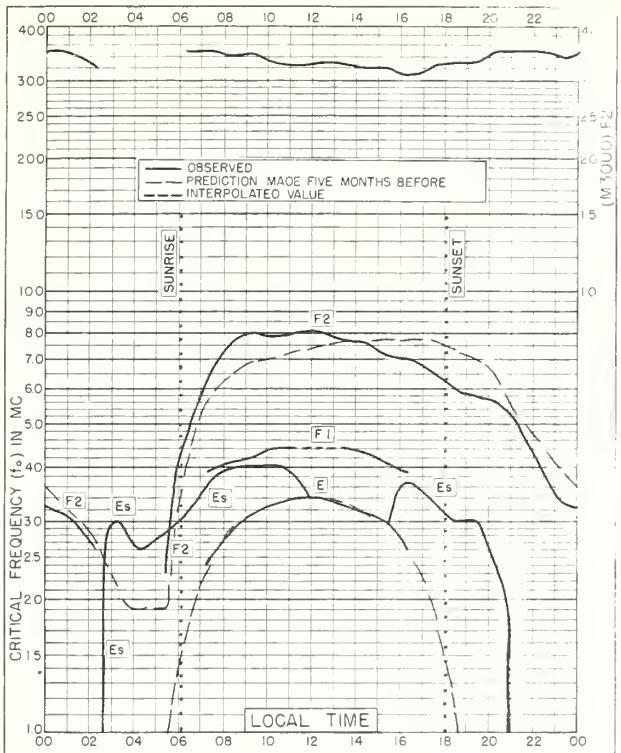


Fig 145. NAIROBI, KENYA
1.3°S, 36.8° E AUGUST 1954

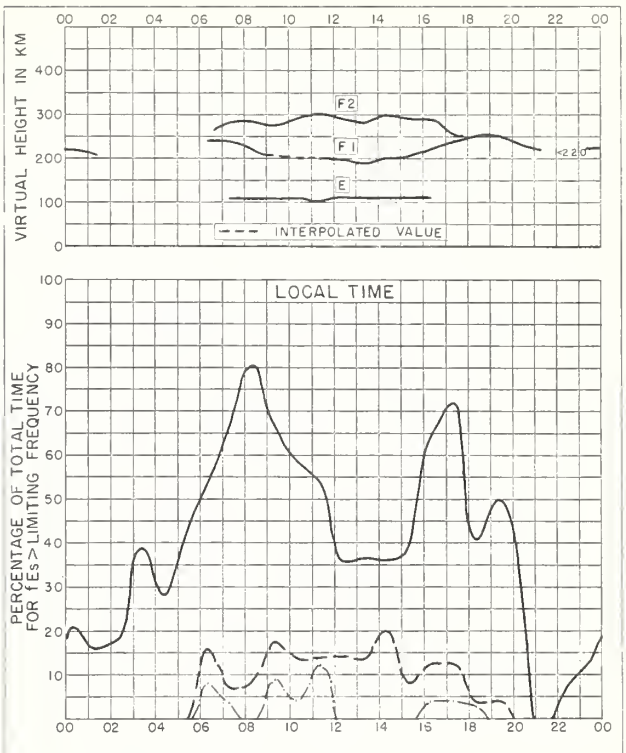


Fig. 146 NAIROBI, KENYA AUGUST 1954

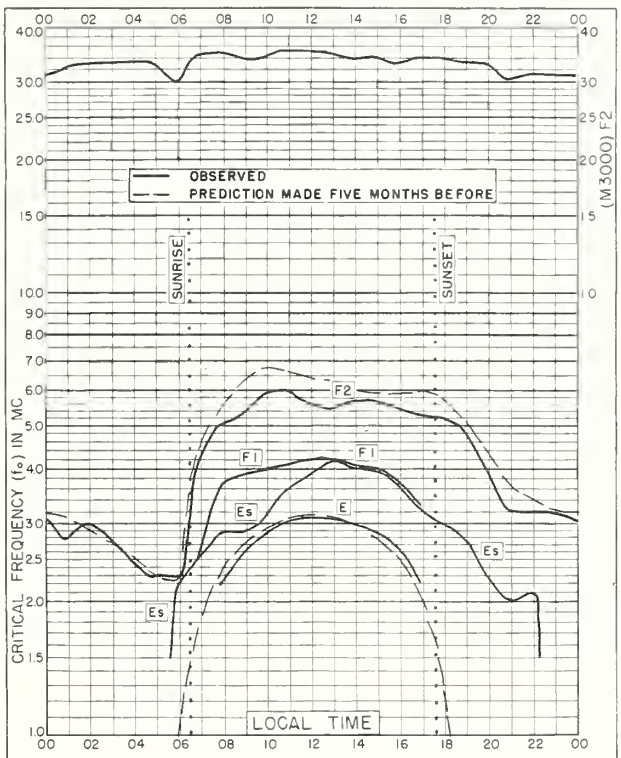


Fig 147. RAROTONGA I.
21.3°S, 159.8° W AUGUST 1954

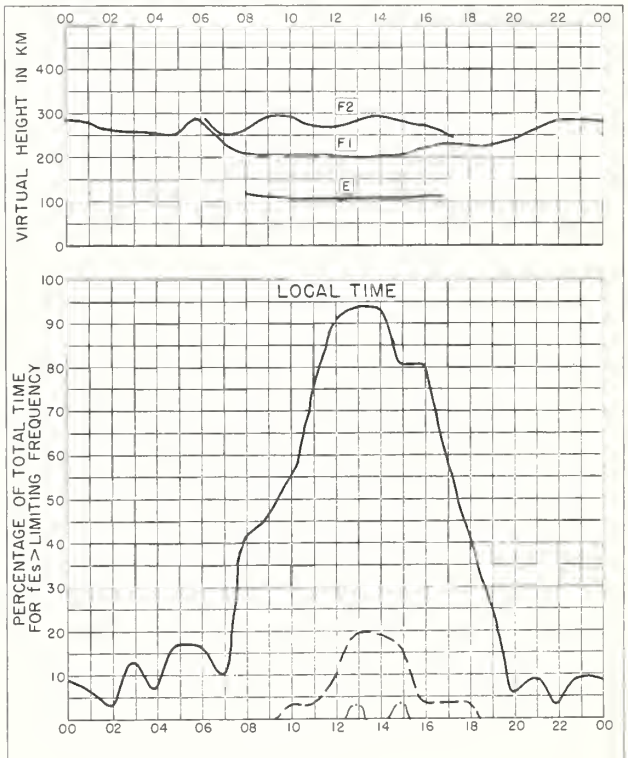


Fig 148. RAROTONGA I AUGUST 1954

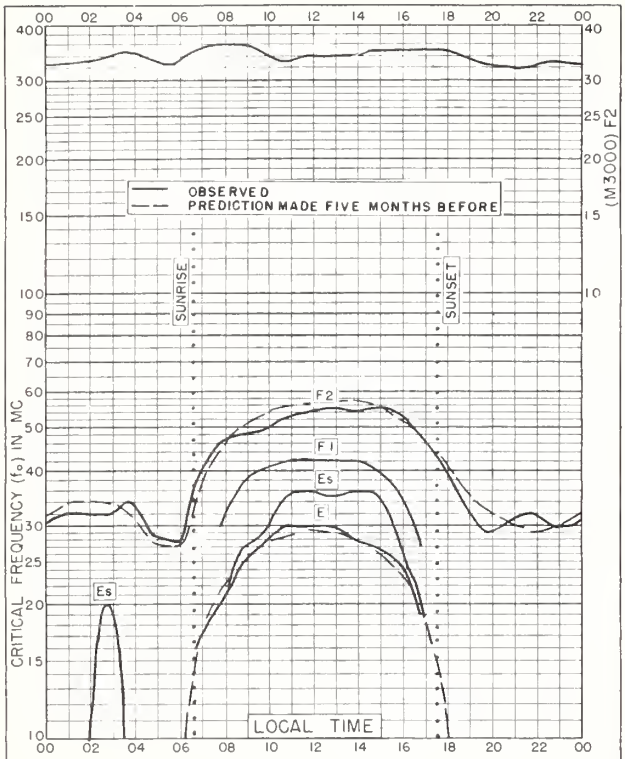


Fig 149. WATHEROO, W AUSTRALIA
30.3°S, 115.9°E AUGUST 1954

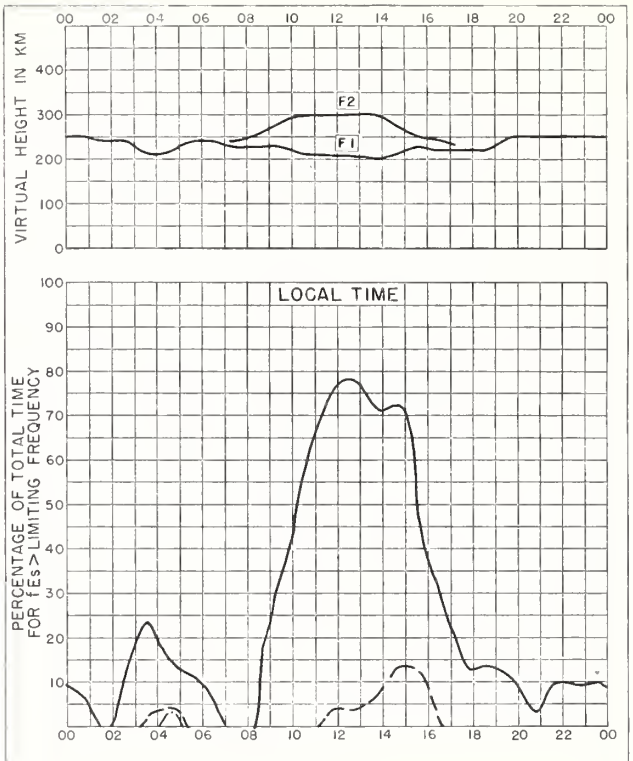


Fig. 150. WATHEROO, W. AUSTRALIA AUGUST 1954

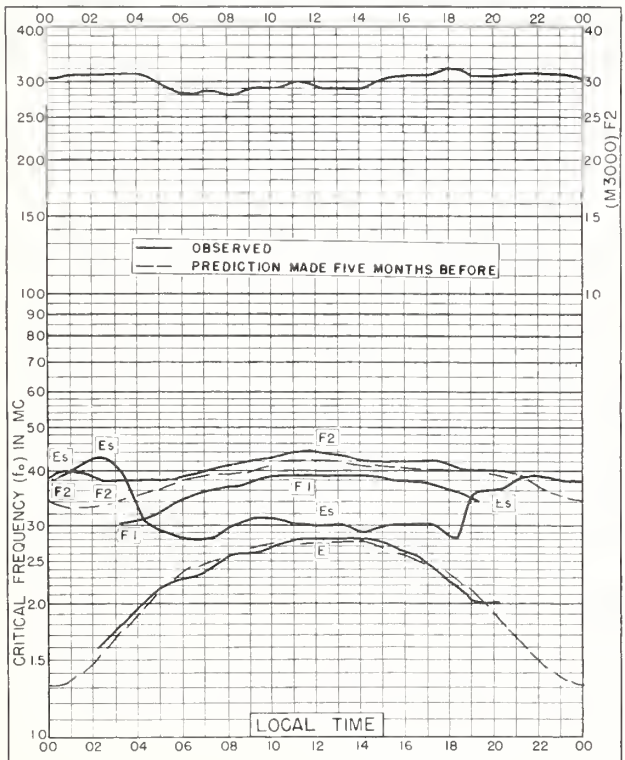


Fig 151. TROMSO, NORWAY
69.7°N, 19.0°E JULY 1954

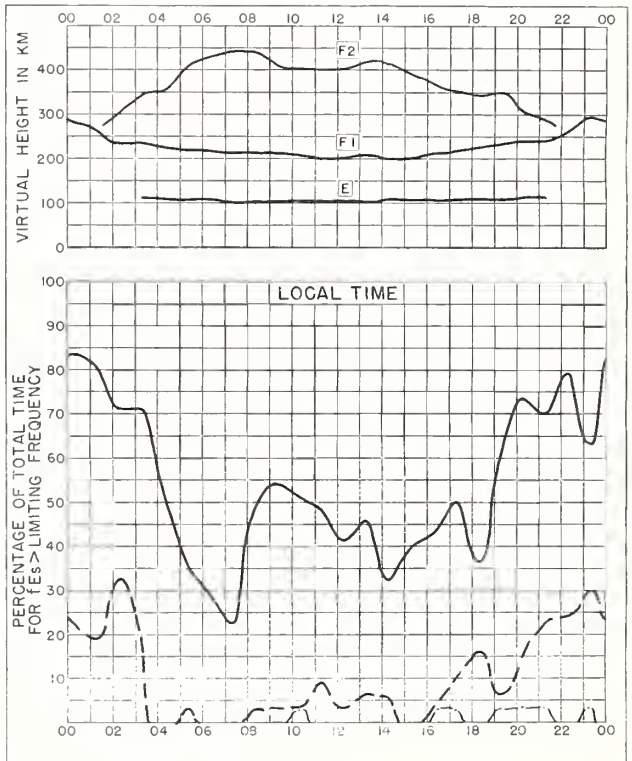


Fig. 152. TROMSO, NORWAY JULY 1954

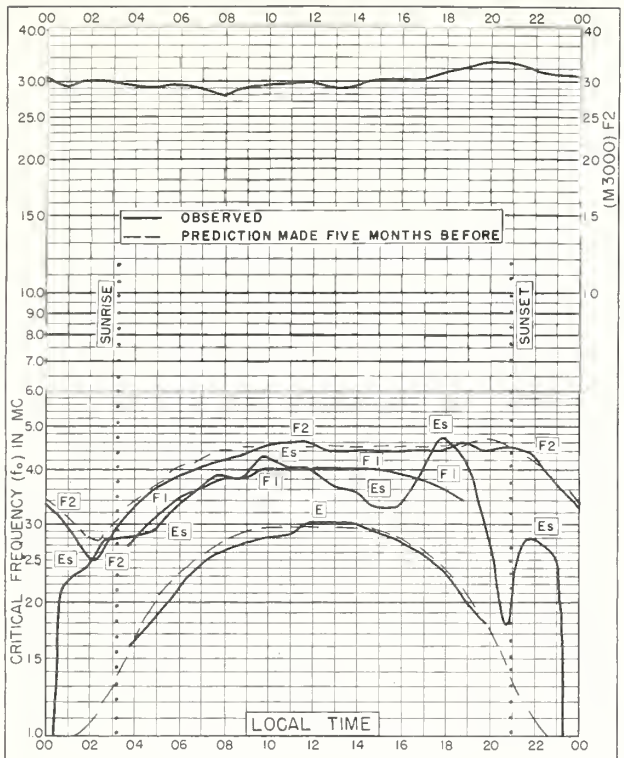


Fig 153 OSLO, NORWAY
60.0°N, 11.1°E JULY 1954

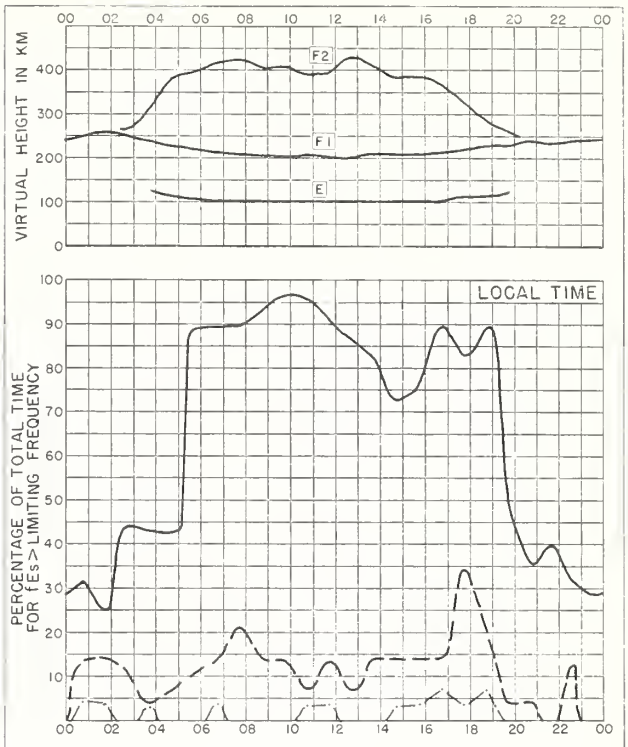


Fig 154. OSLO, NORWAY JULY 1954

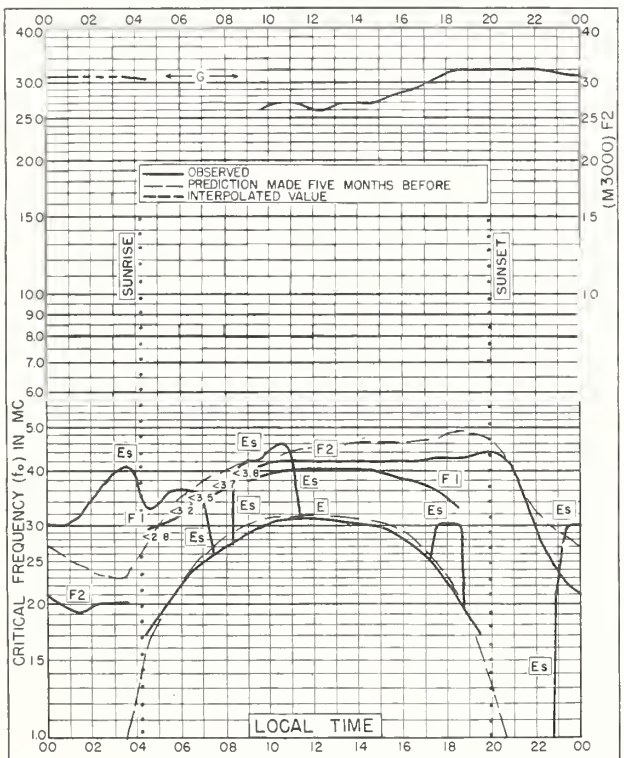


Fig 155. WINNIPEG, CANADA
49.9°N, 97.4°W JULY 1954

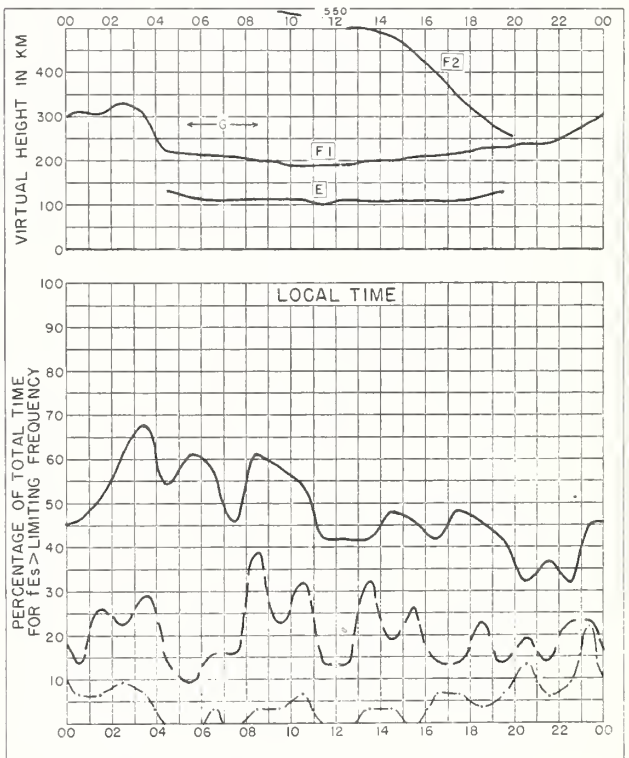


Fig. 156. WINNIPEG, CANADA JULY 1954

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